KUALA LUMPUR 2012
WORLD GAS CONFERENCE

YOLBIL EMERGENCY CALL PROJECT

BURSAGAZ A.Ş.
M.ŞÜKRÜ ÖZDEN

YOLBİL PROJECT (KNOW THE PATH PROJECT)

INTRODUCTION

Energy policy is a balance between three aims, economy, security of supplies and environmental compatibility, which all have equal priority and lead to a sustainable energy system. Sustainable energy systems have the least impact on the environment and use energy resources responsibly. They are geared to the future and therefore also meet the demands of future generations. Sustainable energy systems secure supplies of energy and are open to future technical developments. Natural gas fits harmoniously and largely without conflict into a sustainable energy system.

Natural gas use is increasing each day due to its clear advantages over other energy sources and has become an important trade commodity all over the world. For Turkey that is a developing country with a rapidly increasing energy demand it is one of the most important components of sustainable economic development.

Undoubtedly, at a time when natural gas use is becoming more and more widespread in Turkey, building the infrastructure to transport natural gas to industrial facilities and residential buildings has become a prerequisite. Investment is followed by another major issue, sustainable and safe supply of natural gas to the end users.

Operational activities increase parallel to the growing natural gas use in Turkey and gain importance. A common objective of operational activities is a sustainable and safe natural gas supply to the users. To this end license holders, municipalities, suppliers and users should act in a concerted manner and develop themselves continuously. Presently, secure and sustainable natural gas supply is very important for the natural gas market. Natural gas distribution companies have an important duty in this process. Customer satisfaction and service quality play a decisive role in the energy sector, as is the case in any other sector. Companies that closely follow and make use of technological developments in the natural gas market where there is a lot of competition are one step ahead. In this sense Yolbil Project has been developed through technological innovations and is an important project for secure and sustainable natural gas supply and a higher service quality and customer satisfaction level.

1. ABOUT BURSAGAZ

Bursagaz is a natural gas distribution company located on the northwest of Turkey, in Bursa province. Bursagaz has been privatized in 2004 and one of biggest Turkish incorporated companies Çalık has realized the acquisition of the Company by %90 of the shares. Bursagaz today it is running for more than 740.000 subscribers. Bursagaz supplies natural gas distribution service in Bursa Province within the licensed zone determined by EMRA, the Turkish Energy Market Regulatory Authority, comprising 6 local districts with a population of approximately 2,5 million.

Bursagaz is the 3rd biggest natural gas distribution Company in the national sector regarding its 5.000 km length of grid controlled over 2 main city gate stations and 4 city stations. After Bursagaz's shares were transferred to EWE AG, the Germany's well known multi utility Company , EWE AG raised as the biggest shareholder by %80 of the shares, Çalık Group

remained by %10 shares and Bursa Metropolitan Municipality by %10. Here upon Bursagaz benefited from the international experience of the EWE Group on the Utility sector and started to implement technological projects such as GIS and SCADA.

Bursagaz is applying the World best ERP system, SAP on all of its operational and managerial processes. Bursagaz has 6 quality management system certification such as ISO 9001, ISO 14001, OHSAS 18001, ISO 10002, ISO 27001 and ISO 170025, and also it is the EFQM award winner of 2008.

1.1 BURSAGAZ ACTIVITIES

Natural gas operation staff should be well trained and competent. The operational staff is provided with training on:

- Basics of natural gas
- First aid
- Intervention into gas lines
- Business operation
- Indoor or in-house installation etc.

Natural gas distribution companies are in constant contact with the municipality, fire brigade and other infrastructure organizations. The fire brigade participates in training and drills on response to natural gas fires. Other infrastructure organizations regularly receive training on the natural gas network.

Other infrastructure organizations have to get excavation permits from the natural gas distribution company before they start work. Thanks to these permits damage is prevented trough information on the natural gas network. Moreover, infrastructure control staff recruited at the business operation side monitor these excavations.

The distribution company has on duty staff to respond to emergency calls (fire, damage to the line, natural gas odor etc.) within fifteen minutes with their emergency response vehicles. These vehicles are equipped with a signal lamp and have right of way. Natural gas line damages are responded to and removed as soon as possible by trained and competent staff. In the same way, the distributio n company has a construction team for excavation works.

The distribution company prepares scenarios for disasters, floods etc., plans emergency actions drills and executes them with the participation of all staff.

The distribution company conducts leak searches twice a year on the whole network. Search is conducted via Optic Methane Detectors and underground leaks detected and removed.

2. OPERATION AND SECURITY OF THE NATURAL GAS INFRASTRUCTURE

Natural gas is an environmentally friendly, economic, convenient and uninterrupted fuel and one of the safest fuels if used by the rules. That's why; gas distribution companies have major responsibilities regarding the safe use of natural gas.

The Turkish Energy Market Regulation Authority (EMRA) issues gas distribution licenses in Turkey. The authority regulates and supervises the adequateness, quality, sustainability, low-cost, safety and environmental friendliness of natural gas supply to customers as per the law. All license holders are obliged to abide by the relevant law and secondary legislation.

Below are the major safe natural gas supply articles stipulated in the legislation:

1. The distribution company shall check for and record leaks according to the relevant legislation and standards at shorter than six monthly intervals in order to detect and take measures against leaks for safety purposes.
2. The distribution company shall establish an emergency response organization for timely (in 15 min.) intervention and effective solution to failures by taking into account network characteristics. The emergency response center shall have a sufficient number of telephone lines to answer emergency calls made to the special service hotline after at the latest three call signals without transfer of the call to the automatic exchange center. Moreover, the mentioned center shall have a sufficient number of fully-equipped emergency response vehicles and adequately numbered and trained staff to operate these.
3. The distribution company shall draw up a Natural Gas Emergency Action Plan entailing the methods to be followed under extraordinary circumstances.
4. Natural gas infrastructure information systems are systems that enable the generation and recording of any data related to the distribution network via a computer program and allow for individual or collective queries. The distribution company shall digitalize the measurements made during engineering and project design studies for the purpose of extending the network in a way compatible with the national coordinate system by map updates. Following implementation current projects and their data shall be stored on the natural gas infrastructure information system to be set up by the distribution company. As data on the distribution network change and are renewed in the natural gas infrastructure information network they shall be updated and backed up and stored every three months.

3. YOLBIL PROJECT BACKGROUND and GAINS

Before running the YOLBIL Project, the Bursagaz Emergency intervention call recording "master control " process was as mentioned below :

- The name and surname of the notifying person, notification address, telephone number, subject of the notification and notification receiving time were manually recorded by the master control operator on the notification monitoring book. The info

received were transferred to the on-site emergency teams by phone or RF (radio frequency). In this stage the notification is only sent to the team responsible for the determined region.

- Transaction order has been proceeded for each notification on SAP system to the related team
- Arrival time, operation done and departure time of the team reached to the notification address were also manually recorded by the master control operator on the notification monitoring book.

Emergency Service Teams were;

- Taking notes of the emergency call address transferred by master control operator on phone or on walkie talkie and Moving to the adress by controlling the address on the city map section designated to the team (or via manually searching)
- Delivering arrival time info when reached to the call place to the master control unit by phone or walkie talkie
- Delivering the departure time and operation held to the master control staff after assessing the call.
- Recording notifications to the system on the transactions opened over SAP after the site teams shift changes, for the notifications assessed during the all day long

4. THE AIM OF YOLBIL PROJECT

The aim of Yolbil project is to transfer calls coming in to the Natural Gas Emergency Response Hotline 187 in a fast manner without any delay to the teams via state-of-the-art technologies, to convey the address information, direct the teams to the address, process the call online following its assessment with the aim of providing higher service quality and customer satisfaction.

Gains obtained on the master control side;

- While receiving the call it will be immediately send to the service team over the pc (while speaking with subscriber on phone)
- The transaction will be automatically opened while delivering the notification by help of SAP integration
- There will be no direction description to the related team, the address info will be delivered visually and in written by the help of navigation system.
- The phone and walkie talkie speeches with site teams will be decreased
- Notification receiving, arrival and departure times will be automatically recorded
- There will be no need for manual records on the notification monitoring book (information will be recorded on PC and required reporting will be done)
- By the navigation system the vehicles will be monitored and the nearest vehicle will be available to determine and notifications will be sent to this or these teams

Gains obtained on the Emergency Teams side;

- Notification address, subject and receiving time will be automatically delivered to the toughbook devices that each team possesses.

- Notification address will be delivered to the team visually and in directions, the team won't lose time for finding the address and looking it on the map.
- Correspondence with master control unit on phone and on walkie talkie will be decreased.
- Transaction order will be automatically opened on SAP and confirmation operations will be done in online basis just after the assessment of the notification (no extra job at Office)
- Arrival and departure times will be automatically recorded on the system
- Job orders for periodic controls apart from notifications will be automatically opened on SAP and will be able on teams' devices; so that teams will be making their declarations in online basis after having completed actual equipment controls.

Gains obtained on the management side ;

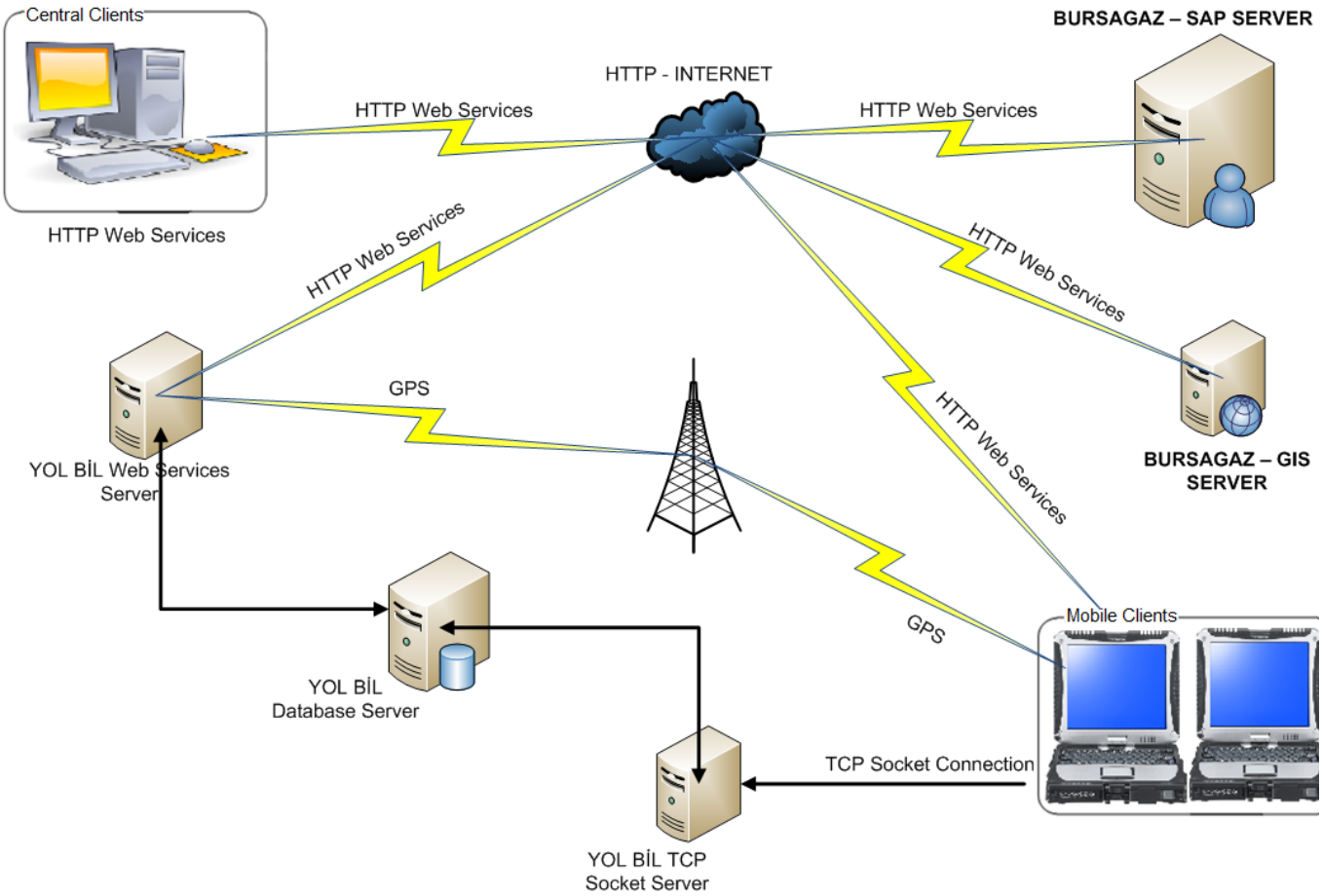
- The locations of the on-site teams will be monitored at Office
- Retroactive data, reports will be immediately followed
- Arrival periods will be diminished
- Employees' satisfaction will be increased
- Customers' satisfaction will be increased
- Notification costs will be decreased.

5. RESPONSE TO CALLS – CALL ASSESSMENT PROCESS AND METHODS

The first phase of Yolbil project was to install a software program on the computers used in the main control room (187) and the equipment of emergency response and service teams. Following the software installation the necessary configurations were set followed by the devices used by the emergency response teams. These are devices mounted in vehicles that are connected online to the central computer. Customer calls to the main control room are being recorded into the system by the main control room staff via the project software program by entering the name, last name, telephone, address, door number (if information is available to the customer, the meter number) together with the incident type. The calls that are recorded by the main control room staff are being conveyed through the software program to the emergency response teams located in districts/zones arranged as per number of subscribers and gas users. If deemed necessary by the main control room staff, the call can be transferred to more than one team at the same time. Once the main control room sends the call (to whichever team), it flags up at the device monitor of that team. The incoming call is accepted by the service team. At this point the main control room computer indicates that it has been accepted. The team accepting the incoming call arrives at the address via the navigation system on the device. The arrival at the call address shows up at the main control room computer. The team that arrives at the address assesses the call. The GIS system on the device shows the line and valve locations on the map depending on the type of incident (excavation control). In the same way, thanks to the GIS system on the device emergency response and service teams can benefit from Yolbil Project also in other ways outside the scope of call assessment such as periodic checks, valve control and maintenance. Following the assessment of the call the emergency response and service staff closes it by entering the required data (meter number, material used, the type of work done etc.) into the SAP system online via the device. A call follow-up form is printed out from a Bluetooth-featured printer at the disposal of the service team and given to the customer. This

completes the call assessment process. The main control room staff monitors the whole process.

6. SYSTEM INFRASTRUCTURE and TOPOLOGY



Picture 1. Topology of the system

6.1 FEATURES OF USED SOFTWARE

Language of Software: C#

Library of Software: .Net Framework 3.5, 4.0

Interface Layer: .NET

Database Server: MSSQL 2008 R2

IDE: Visual Studio. Net 2010

Map: Mapinfo.

6.2 FEATURES OF USED NETWORK

3G Mobil Broadbant (HSPA+, 21Mbps): (WWAN) provides high-speed Internet access via mobile devices. In scope of our project, 3G module used for data transfer (send and receive).

GPS (Global Positioning System): Inscope of our Project, GPS module used for directions that will draw on the map between location with the notice of the location and service personnel.

6.3 FEATURES OF USAGE HARDWARE

PANASONİC TOUGHBOOK CF-19 MK5 STANDART
Mobile Trading Platform Intel® Core™ i5-2520M vPro™
(2.5GHz, 3MB Intel ® Smart Cache, Intel ® 6 serisi Express chipset QM67)
Operation System Windows ® 7 Professional
Memory 4 GB, DDR3 SDRAM (max. 8 GB)
Video Intel® HD Graphics 3000
Disc 320GB HDD
LCD 10.1" XGA Active Matriks (TFT) LCD (500cd/m²
Bluetooth™ 2.1 + Enhanced Data Rate
Wireless LAN Intel® Centrino® Advanced-N 6205 AGN WLAN
LAN 1000BASE-T/100BASE-TX/10Base-T
Integrated Options
GPS
3G Mobil Broadbant (HSPA+, 21Mbps),
Accessories
In-car mounting plate and treadle
In-car charger adapter (12-32v)

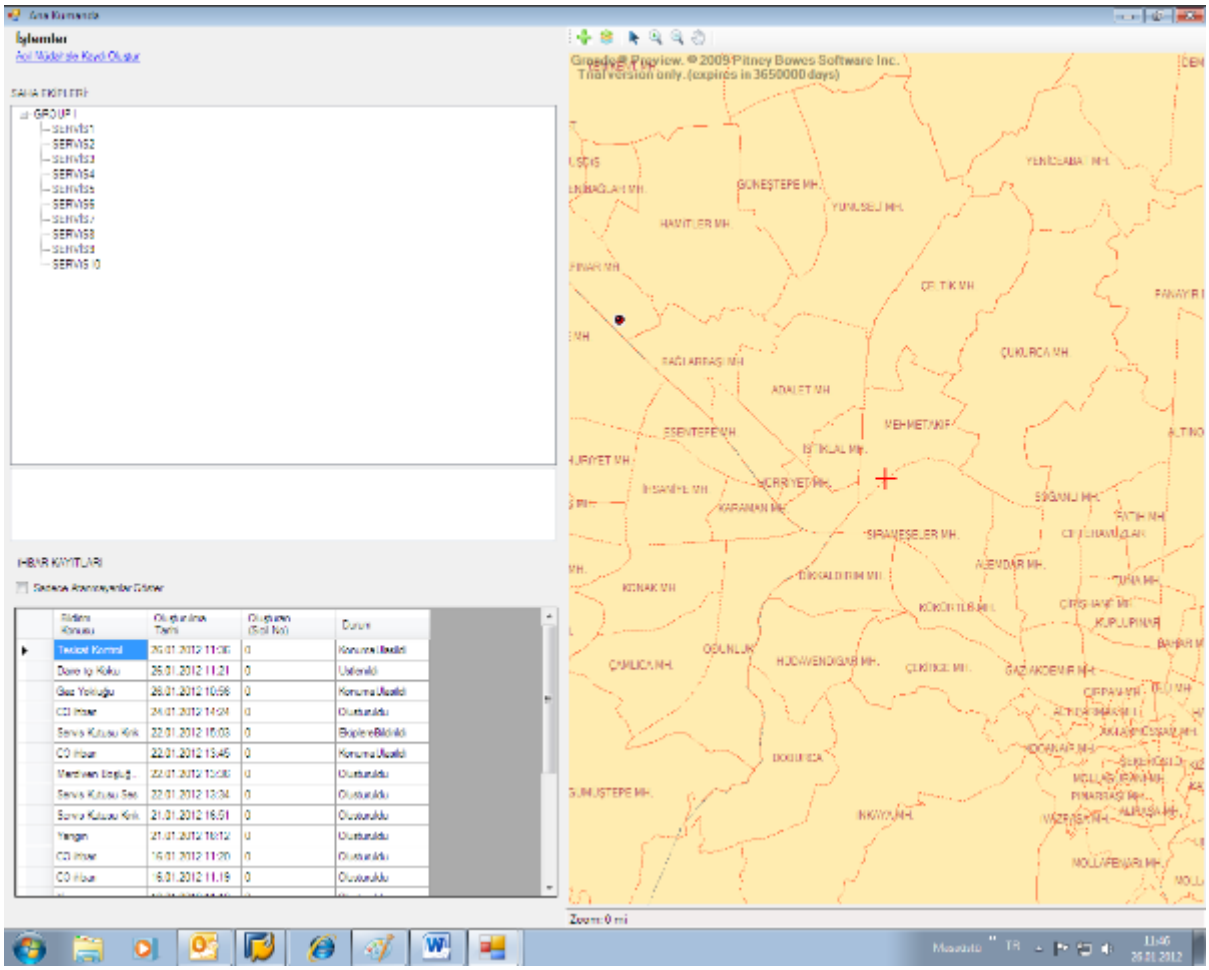
HP Elite 7100 Microtower PC
CPU: Intel® Core™ i5
Chipset: Intel H57 PCH
Video: Intel® HD Graphics integrated with Intel® Core™ i5 processors
Ethernet: Integrated Realtek RTL 8111DL Gigabit Ethernet Controller
RAM: 3GB DDR3 system memory
HDD: 250GB
OS: Windows 7 Enterprise TR

7. CONCLUSION

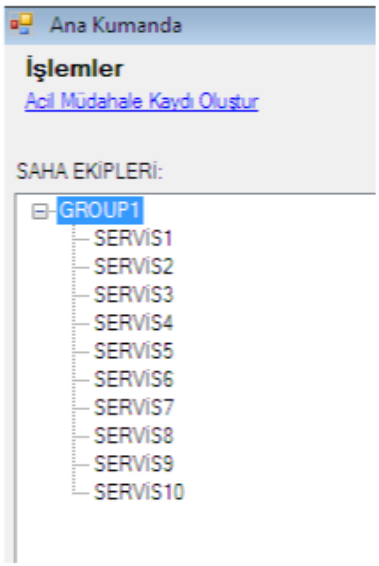
What is most important for a natural gas business operation is safe natural gas supply that goes hand in hand with laws and legislation, conscious consumption and use of technology.

This is why; staff working in this sector should be trained and certified; staff working in this sector should undergo in-service training, be informed about innovations and build on their knowledge continuously; municipalities shifting to natural gas use should make the public aware and always cooperate with the natural gas distribution company in operational matters; international practices followed and experience shared on all platforms.

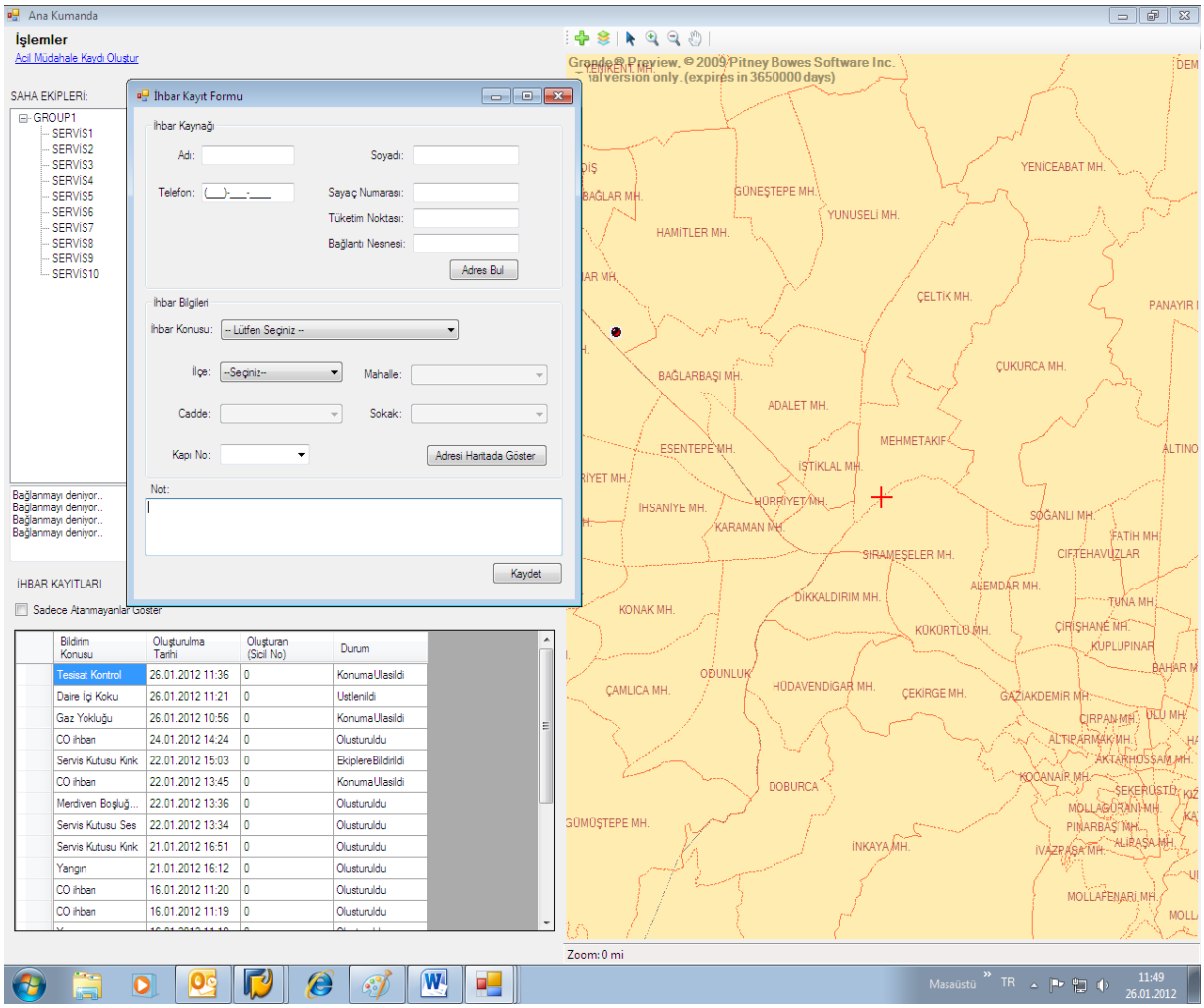
ANNEX: SAMPLE APLICATION

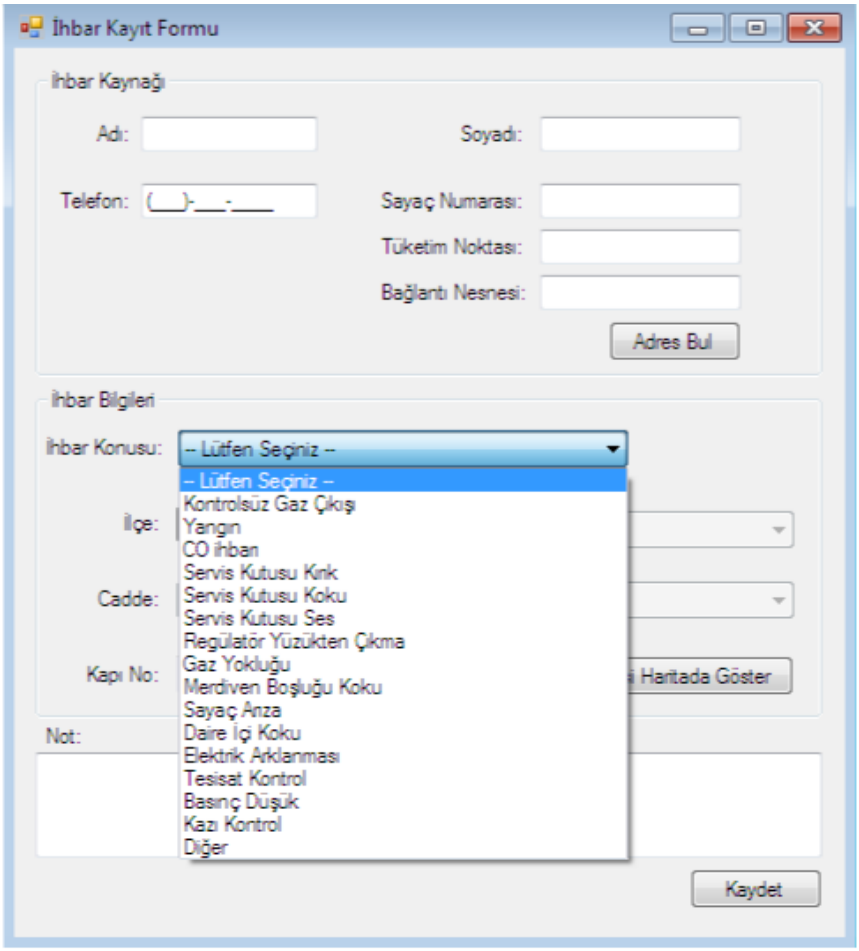


Customer calls are recorded in the menu, where calls are recorded in the system, with the option “Create Emergency Response Record”. The created call is allocated to the group of service teams under the menu ”Field Teams”.

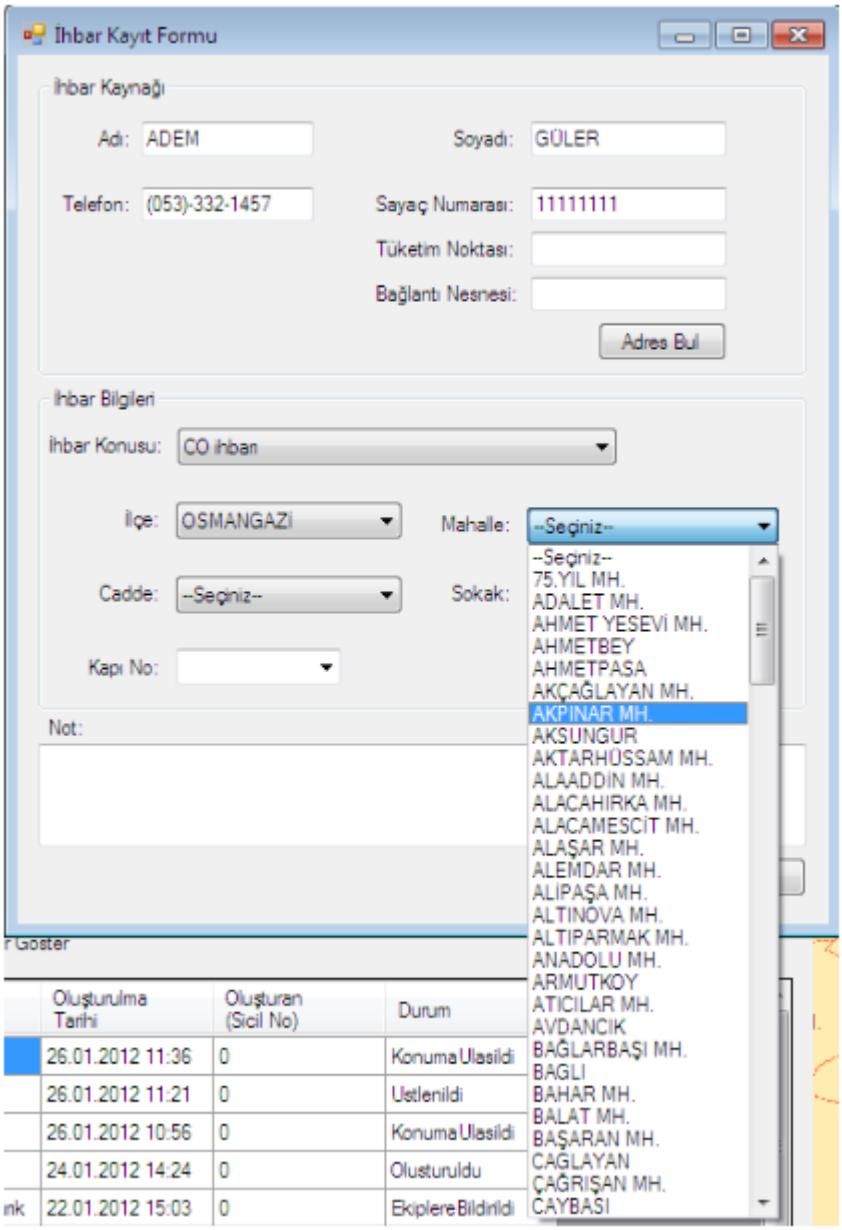


Areas needed to be filled in under " Create Emergency Response Record" are: "Name – Last Name-Telephone" of the person making the call, if available, "Meter Number-Consumption



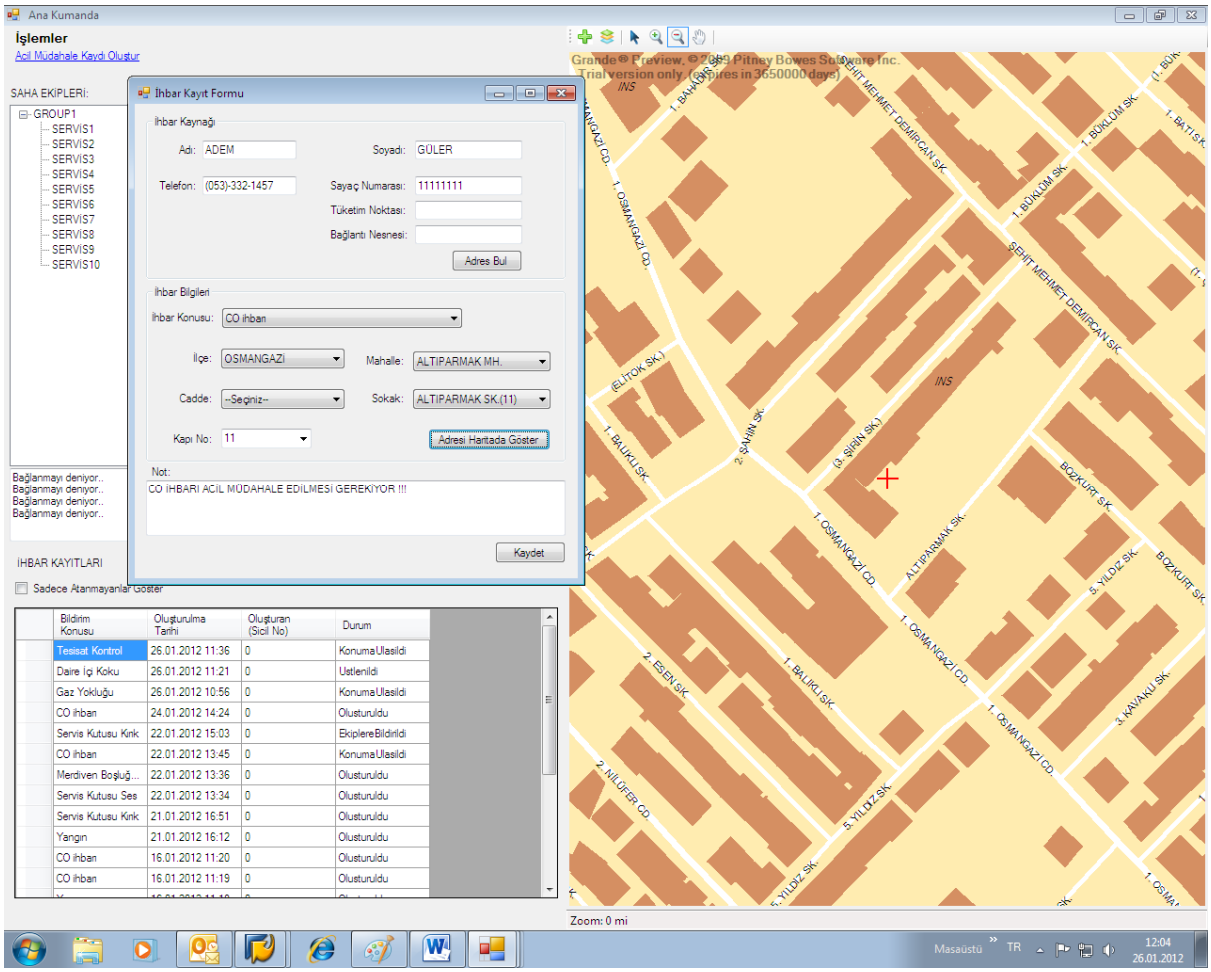


”The Subject of the Call” and the Address of the call are selected manually from the menues in the program.

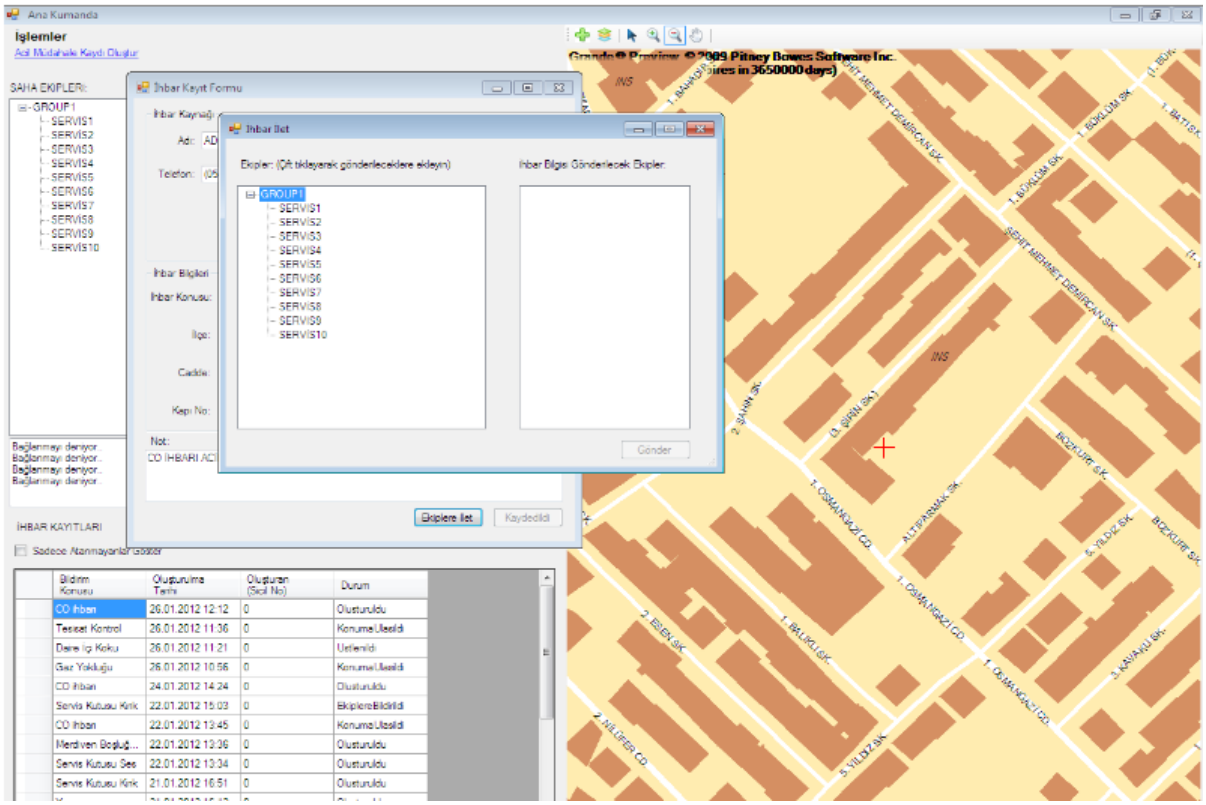


After the required spaces are filled out by the main control staff, a click on the button “Show Address on Map” shows the address of the call on the map screen.

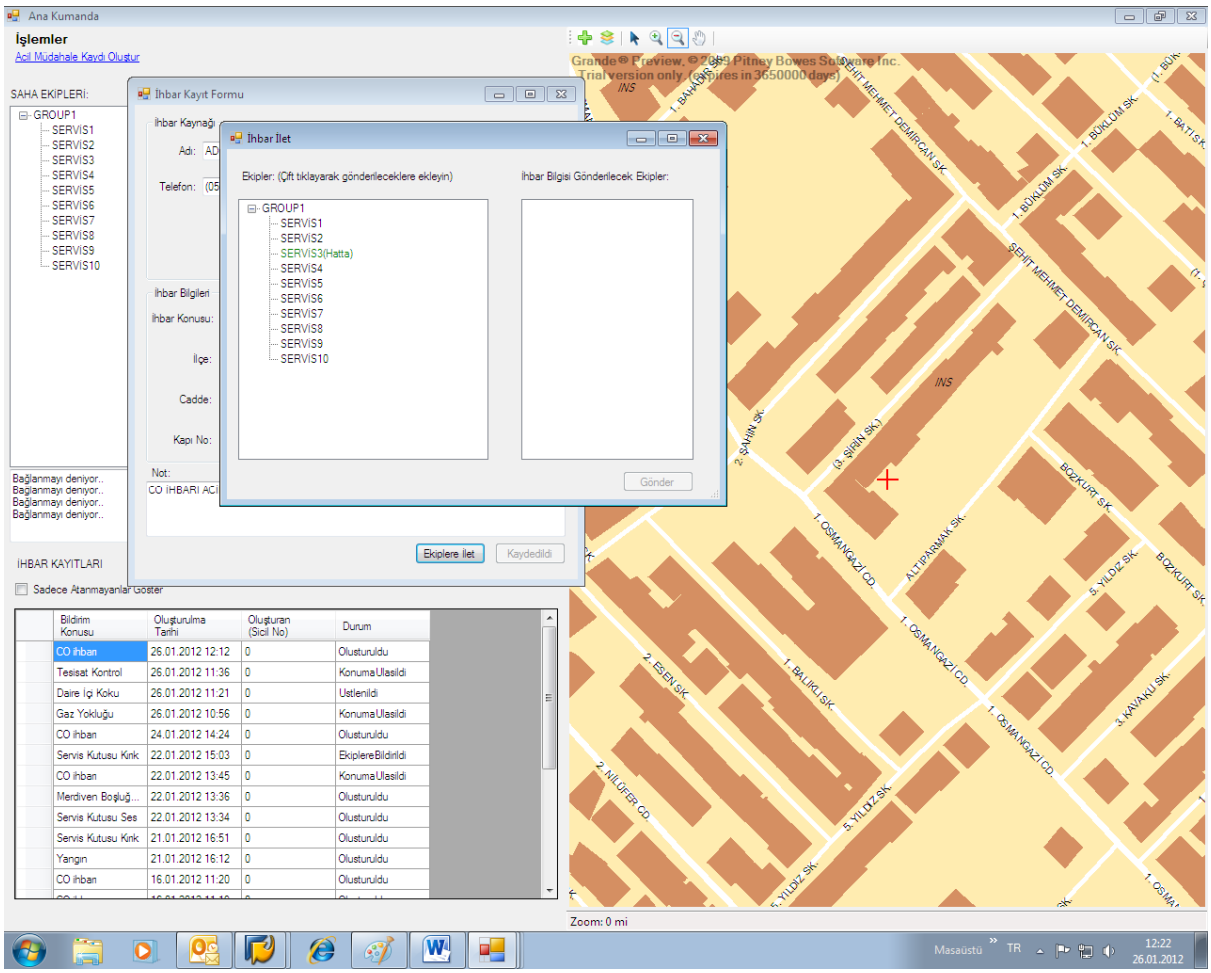
The call is documented with the “Save” button.



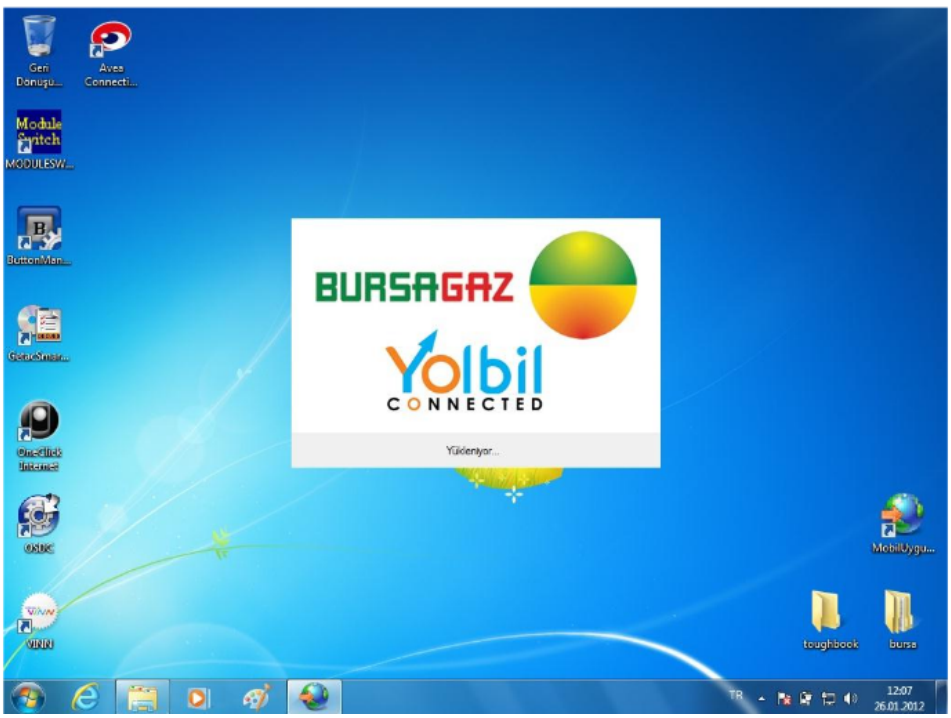
Then the call is transferred/allocated to the field team with the “Allocate to Team” button.



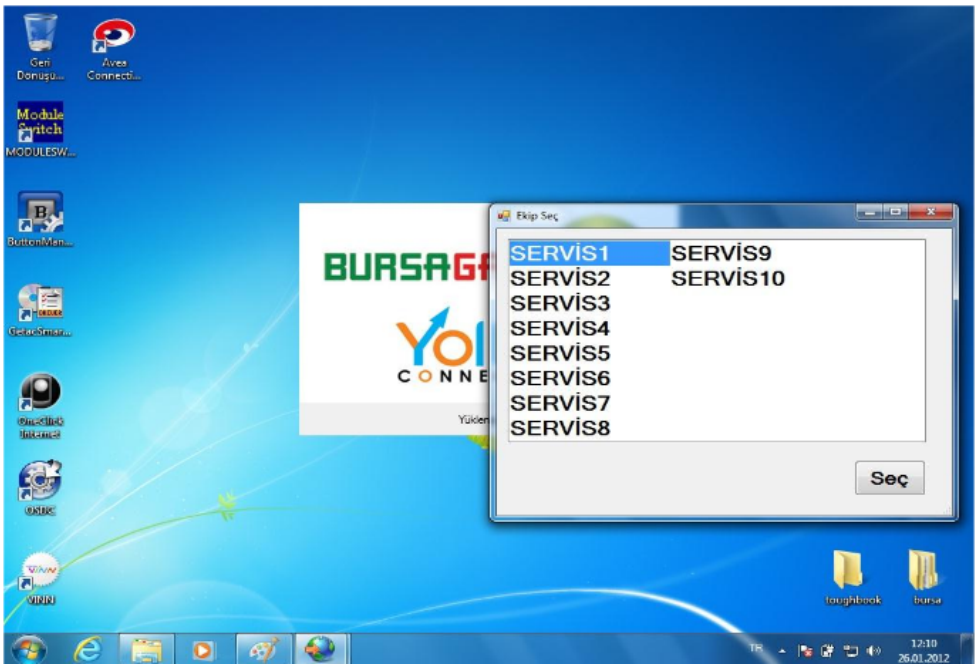
The field team opens Yolbil Connected software on the toughbook, logs into the system, connects to the Main Control software via GPRS, and is displayed as “Online” in green color on the Main Control software screen window under the menu “Field Teams”.



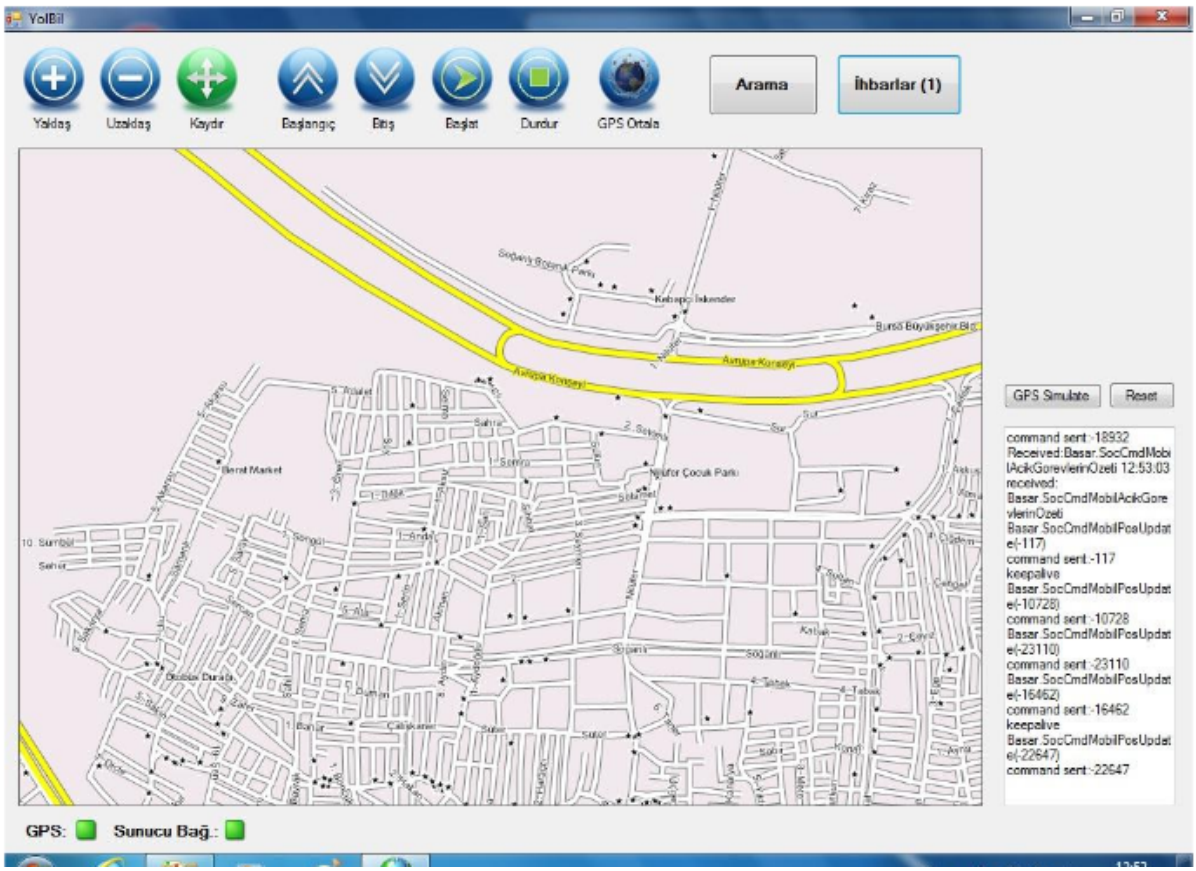
What service staff need to do when connecting to Yolbil Connected software on the toughbook:



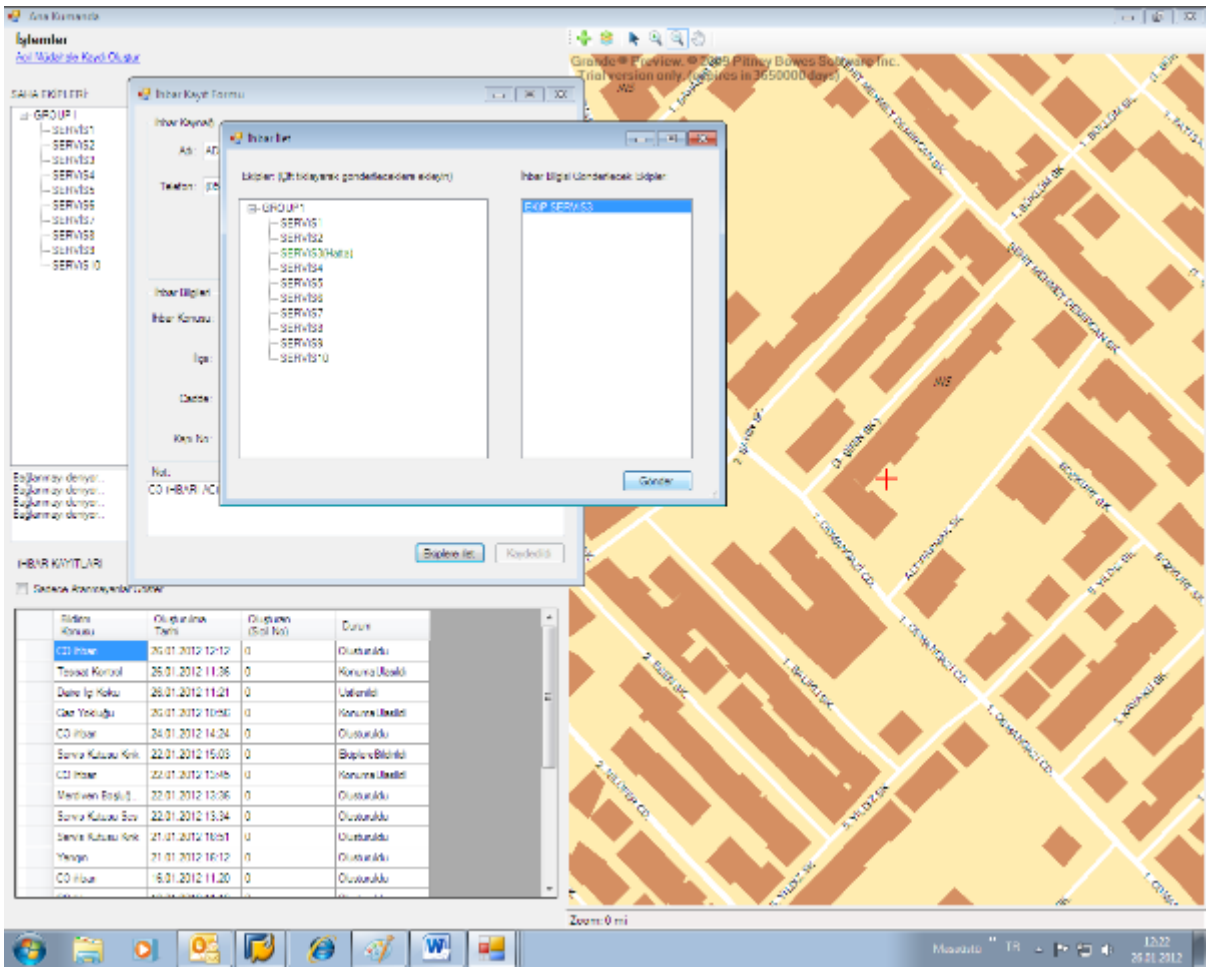
After opening Yolbil Connected application the service staff needs to choose the service group it belongs to under the menu “Select Team”. They log into the system with the “Select” button.

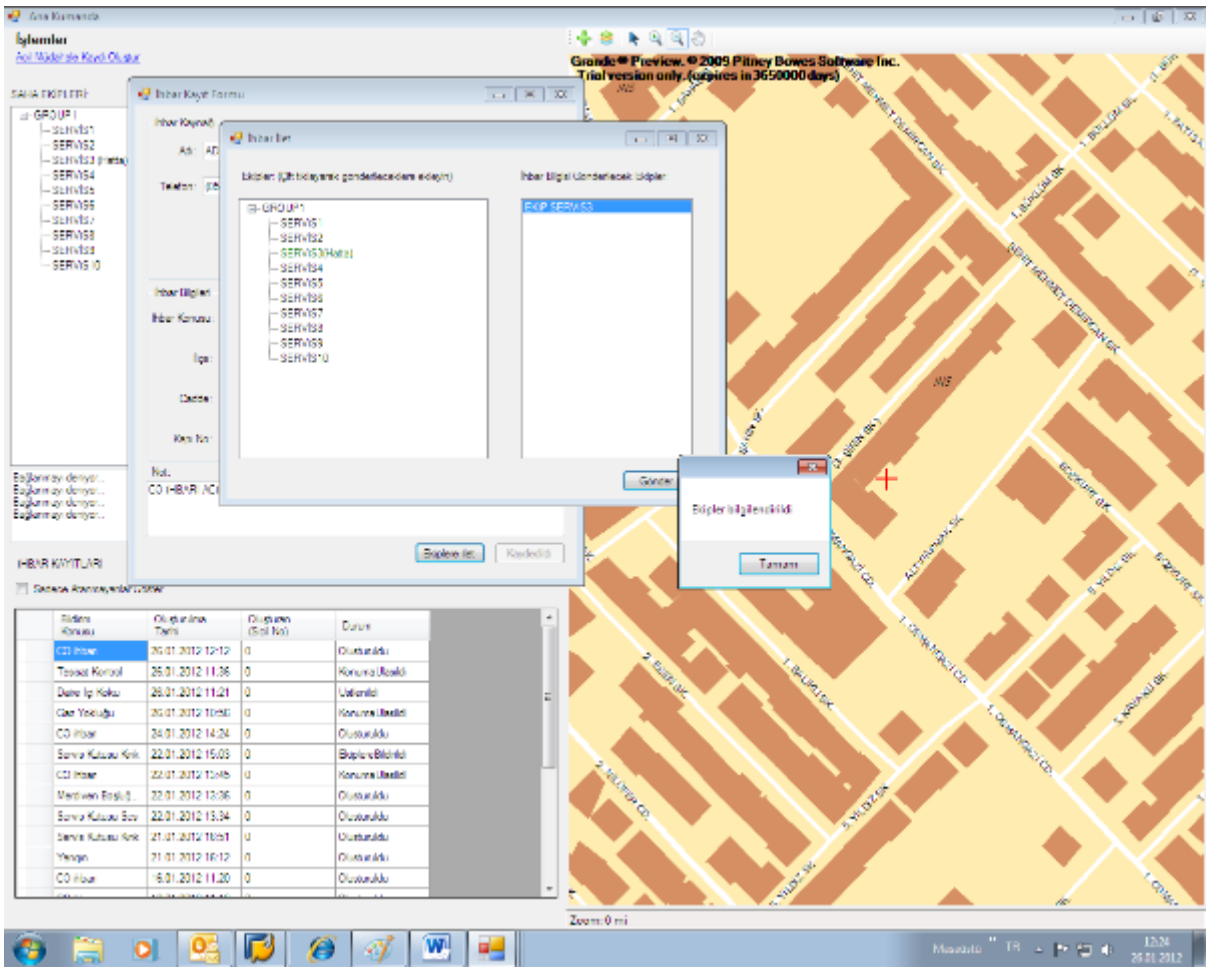


YolBil Connected software “main screen window” is shown in the following figure.

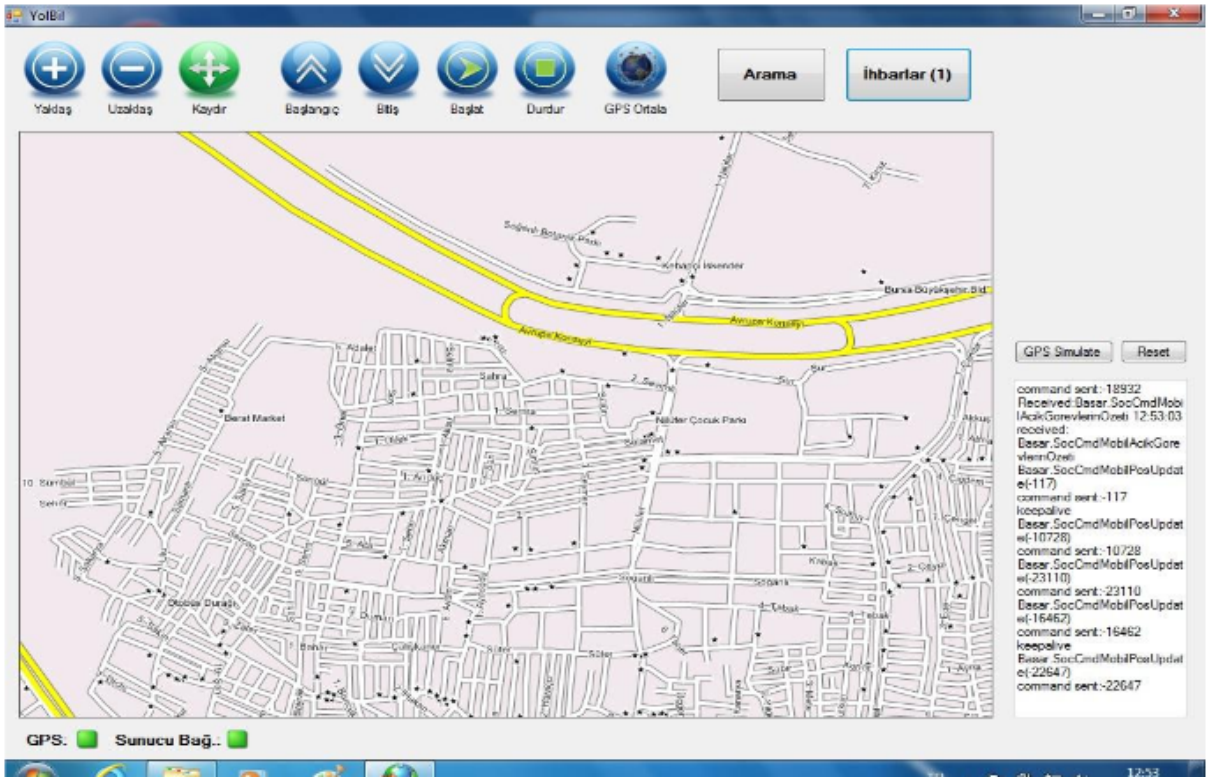


The “Send” button under the “Allocate Call” menu is used to transfer/allocate the call to the selected service team.

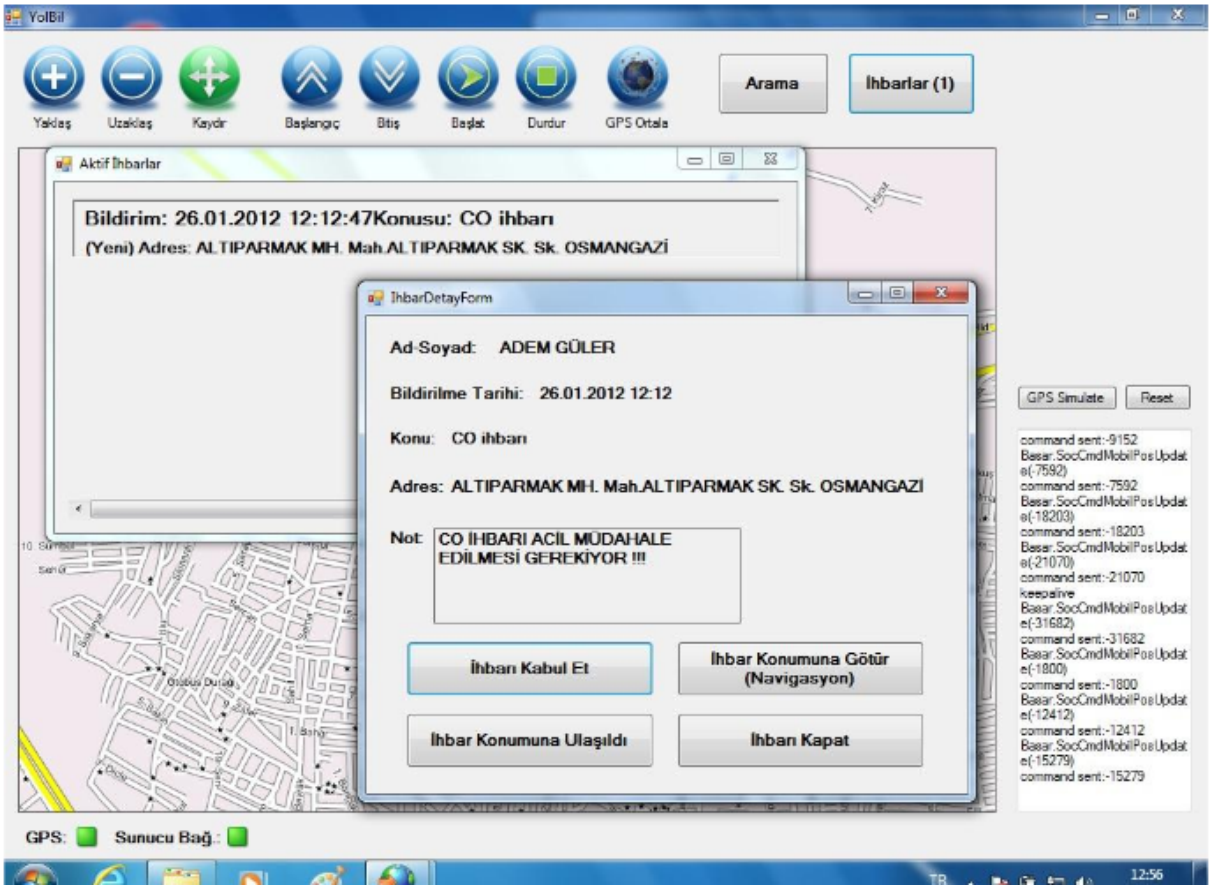




The “Calls” button on the main screen window of YolBil Connected software for the service staff that is sent the call is updated as “Calls (1)” meaning that the call has been received.

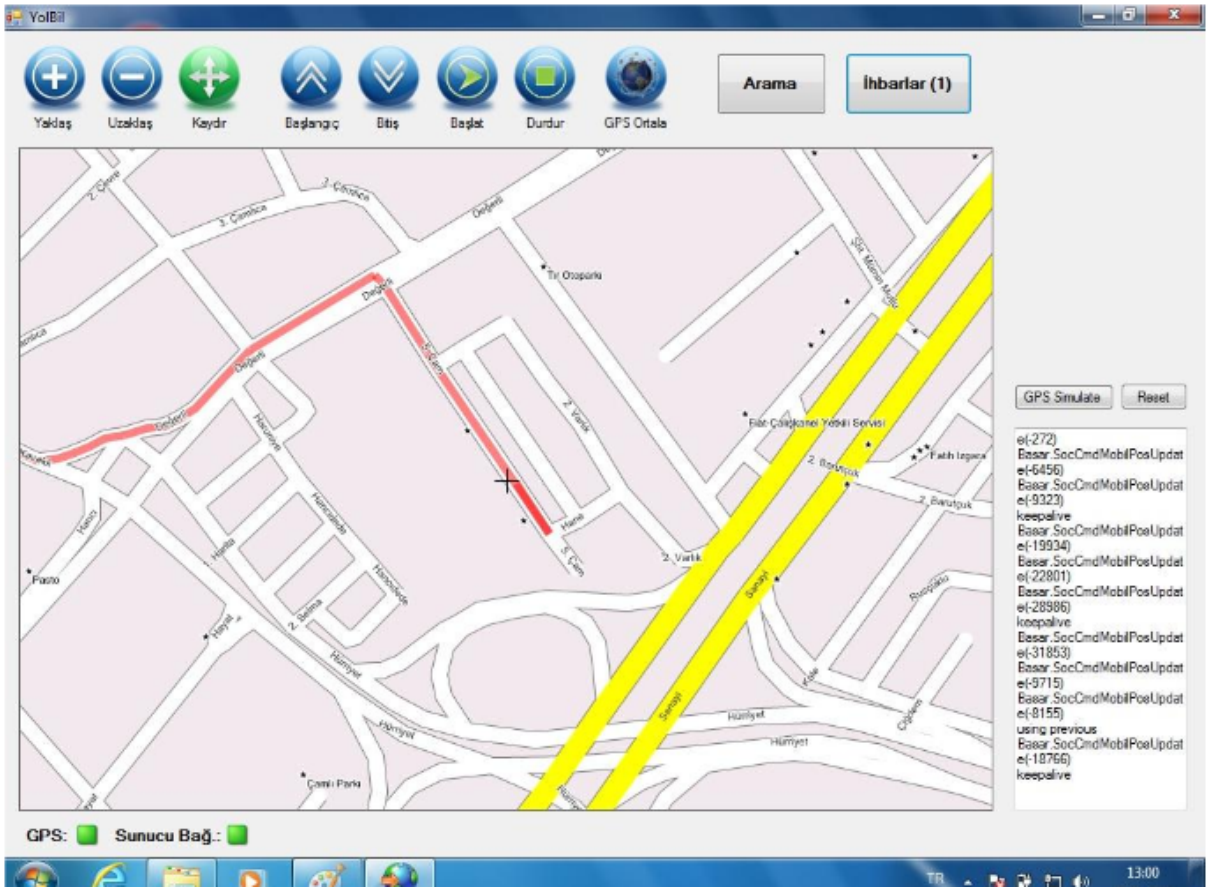


To access the details/content of the sent call a click on the button “Calls (1)”opens the “Active Calls” menu with the list of all call details and another click on the call to be queried opens the “Call Details Form”.

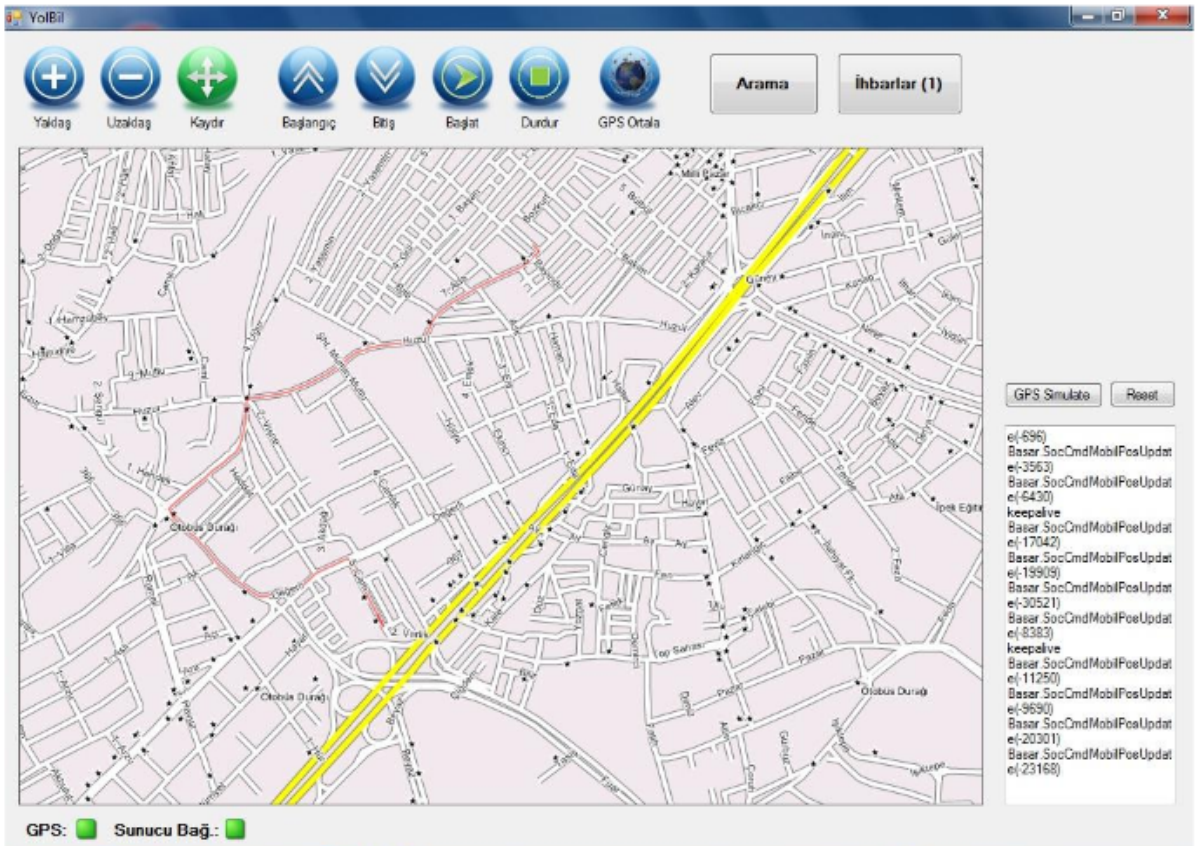


The “Accept Call” button allows the service staff to accept the call meaning that it will work it.

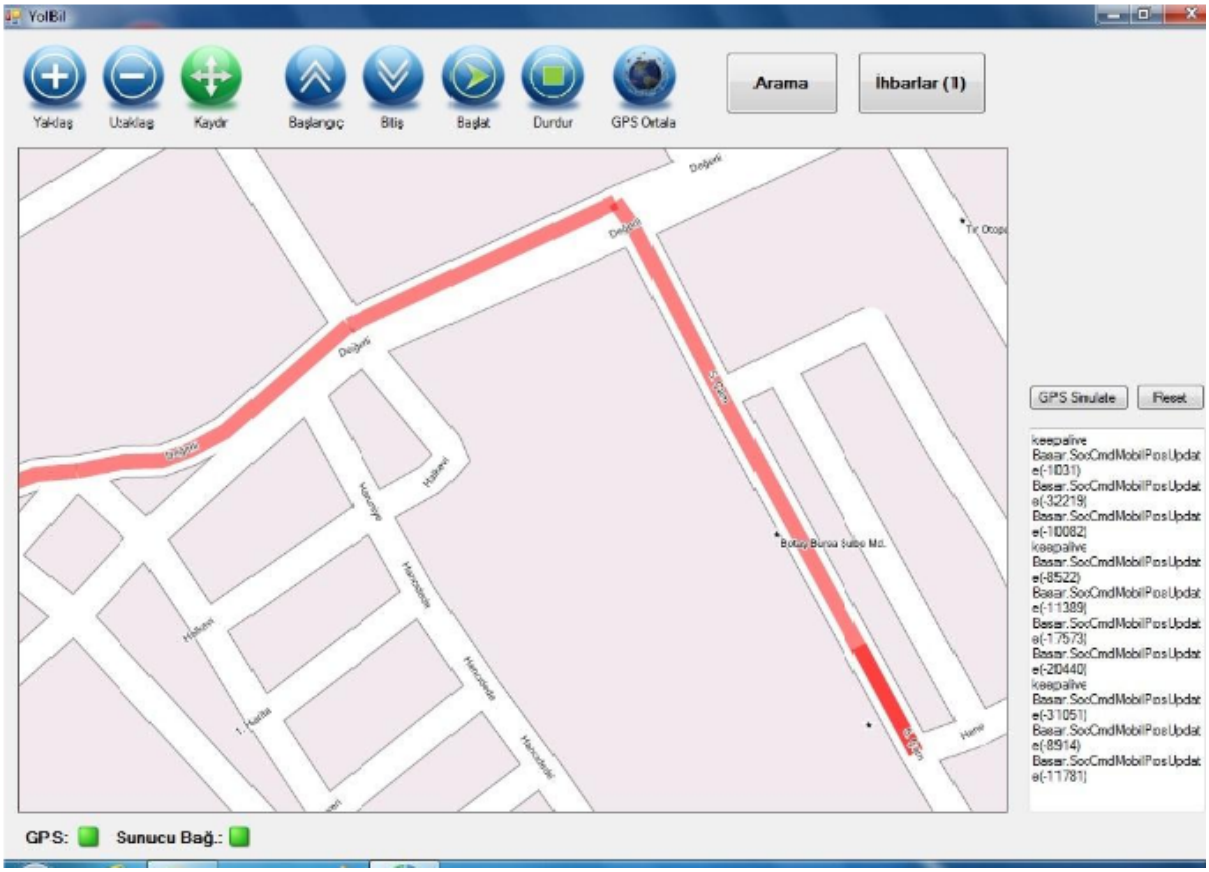
The “Show Call Location” button shows the route between the location/address of the service team and the call location/address.



The “Zoom out” button increases the bird’s view distance on the map.



The “Zoom in” button reduces the bird’s view distance on the map.



The “Start” button initiates the navigation activating the GPS module meaning that directions are given from the point where the service staff is located to the point where the call is located.

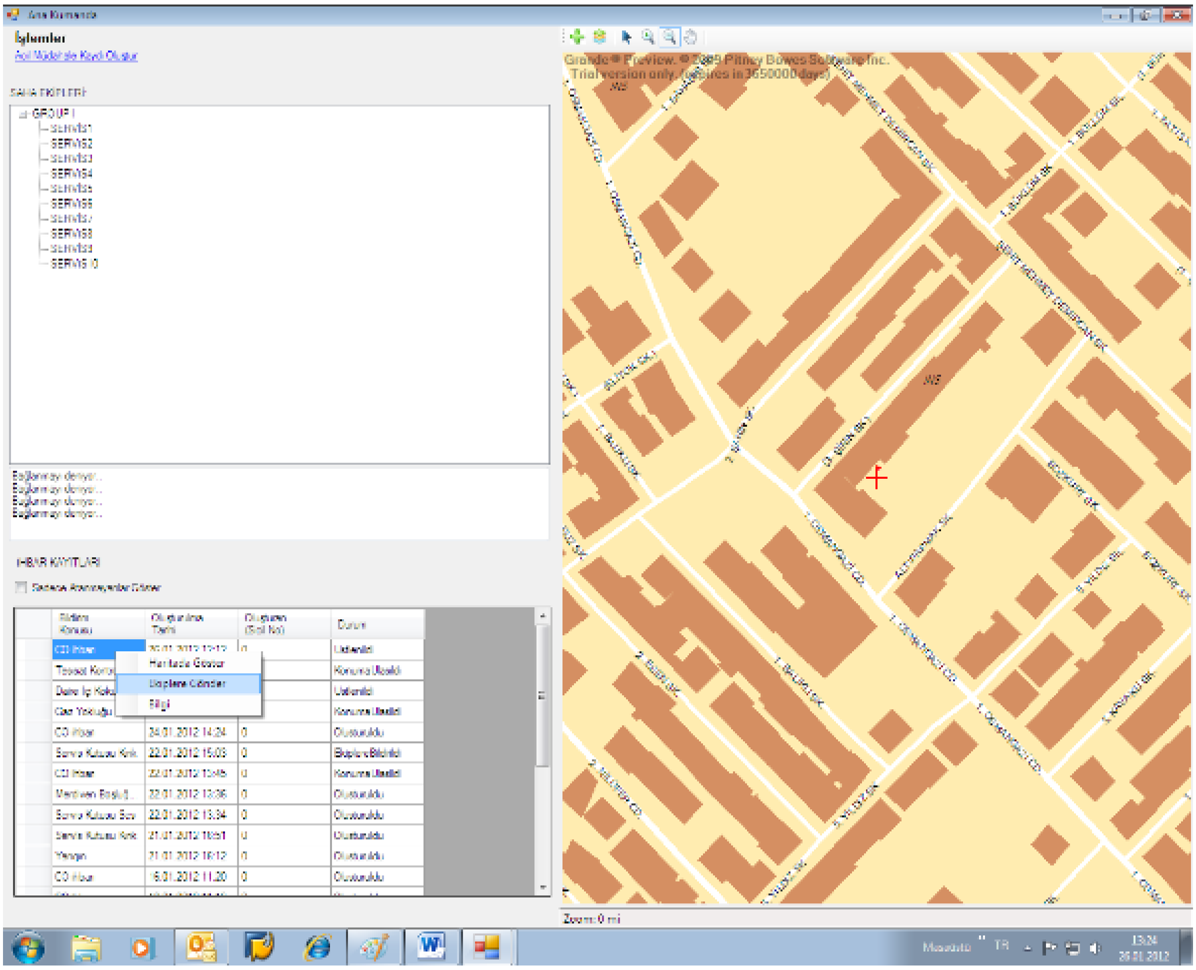
The “Stop” button inactivates the GPS module meaning that the navigation feature does not function.

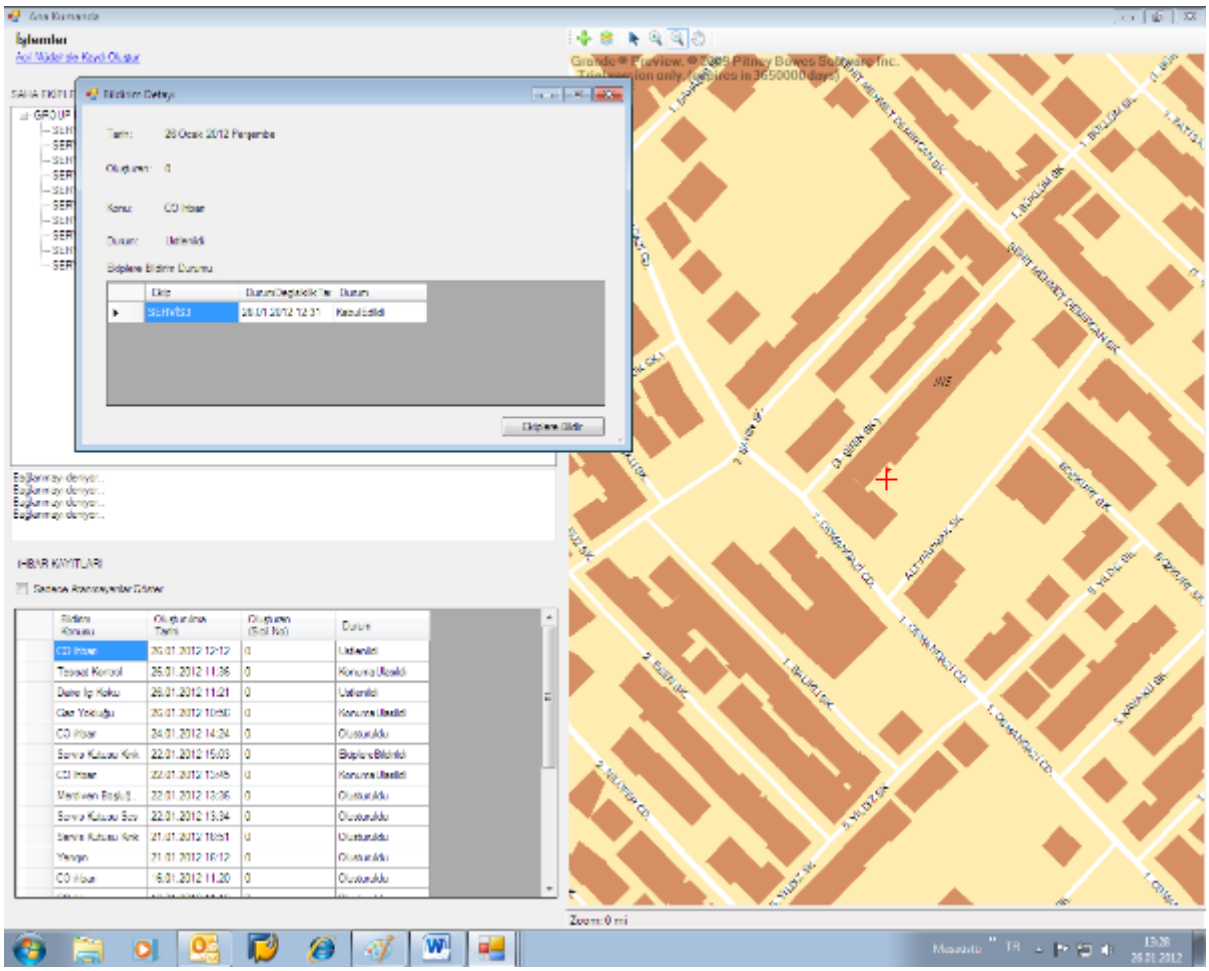
The “Departure” button shows the point of departure/address of the service staff, the “Arrival” button shows the point of arrival which is the call address.

The “Arrived at Call Location” button on the “Call Details Form” has to be clicked when the service team arrives at the call address. The “Close Call” button has to be clicked when the service team leaves the call location/address after having responded to it in the required way, which means that the call has been resolved.

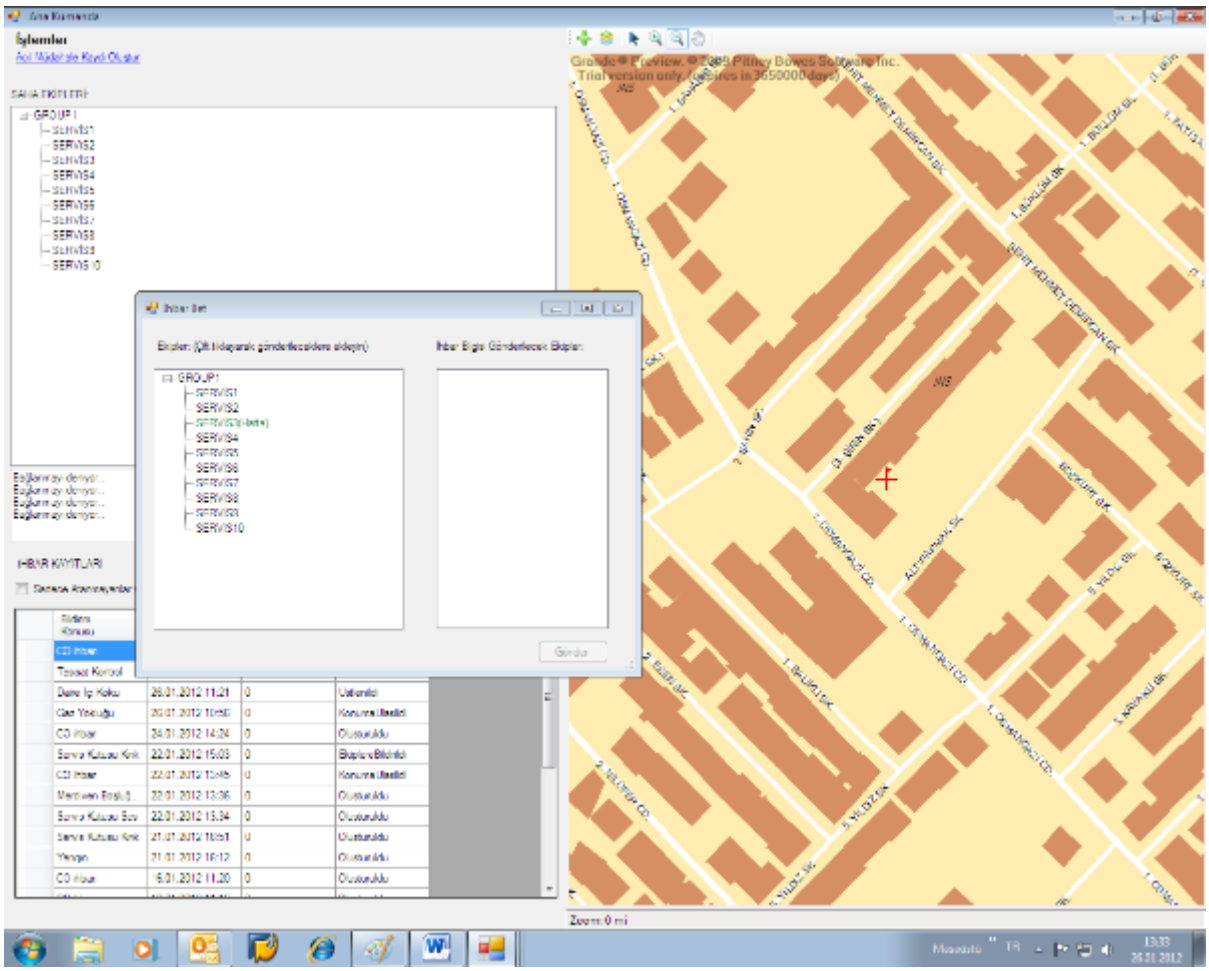
- In the main control software screen window under “Call Records” all calls reports recorded daily can be accessed by date created.

The details of the call can be displayed on the “Call Detail” screen in the “Information” menu.


İşlemler
GROUP 1
Grande ® Preview. ©2009 Pitney Bowes Software Inc.
Trial version only. (expires in 365000 days)
Zoom: 0 mi

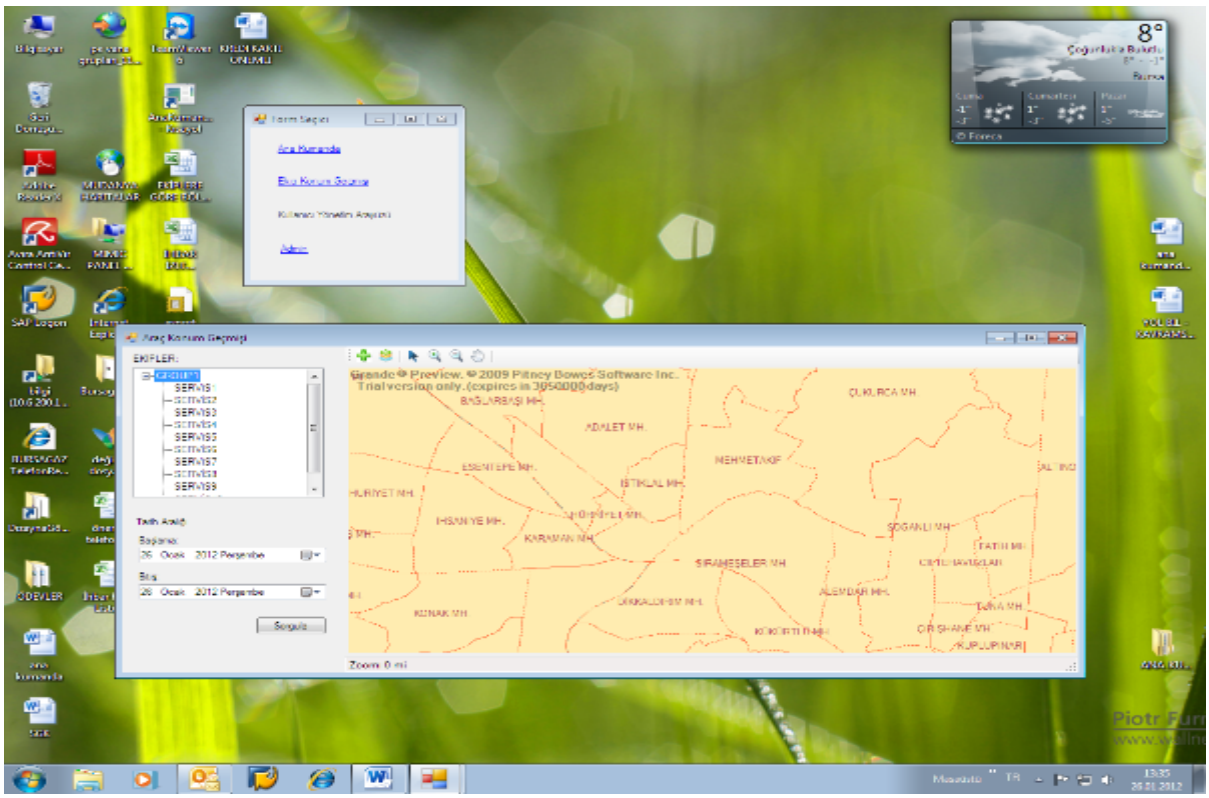


The call can be sent to a service team or resent to another team over the “Allocate Call” menu in the “Send to Teams” menu.

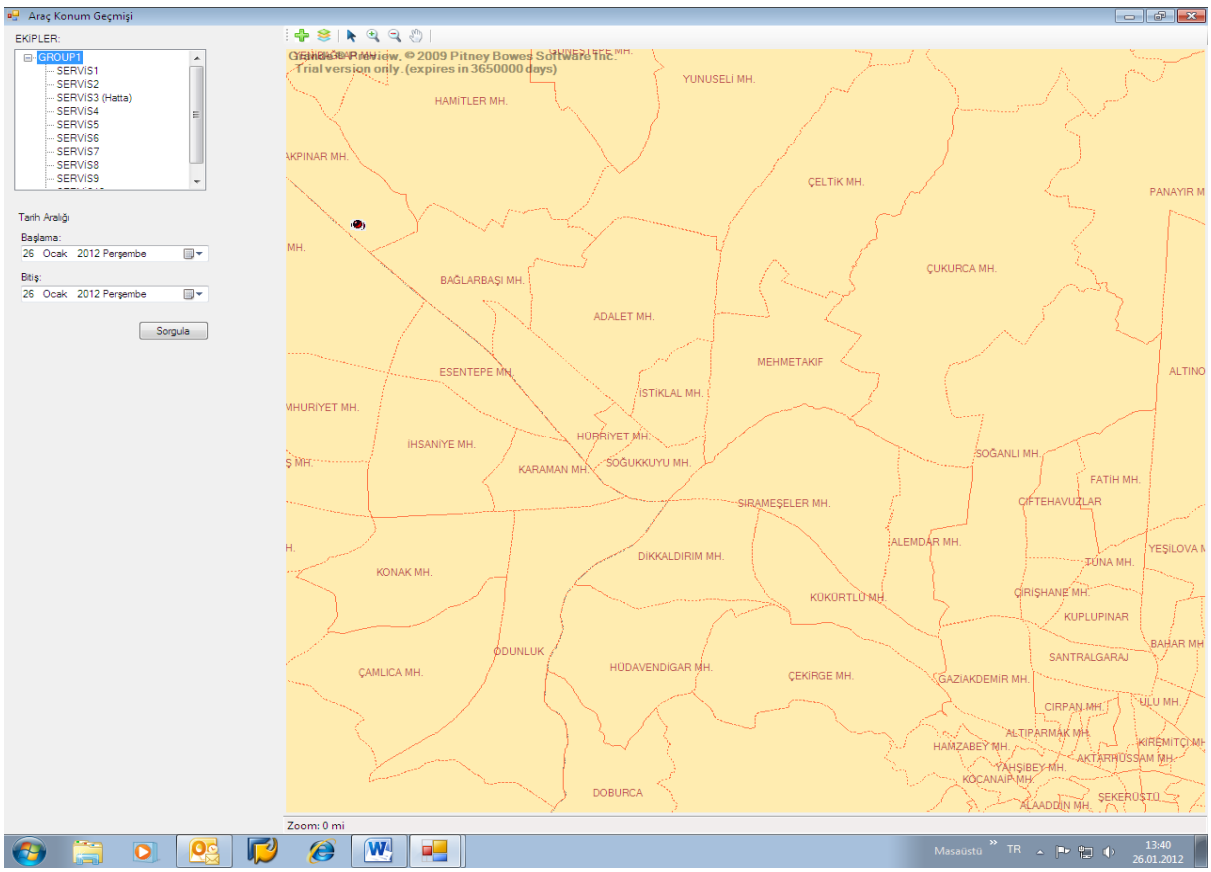


The “Show on Map” menu allows for a review of the directions from the location of the service staff to the location of the call.

- A click on the menu “Location History of Team” on the “Form Selector” screen allows access to the relevant screen:



The following figure shows the “Location History of Team” software “main screen window”.



This is the query screen used to get reports on the work done by service teams by dates. The points on the map show the real time location/address of the field teams.