

## CASE STUDY

ETI BAKIR MAZIDAĞI PHOSPHATE PLANT IN MARDIN, TURKEY



# TURKISH CHEMICAL PLANT DEPLOYS DIMETRA™ EXPRESS TO BOOST PRODUCTIVITY AND ENHANCE WORKER SAFETY

CLEAR, RELIABLE COMMUNICATIONS ACROSS THE PLANT



## ETI BAKIR MAZIDAĞI PHOSPHATE PLANT IN MARDIN, TURKEY

The Eti Bakir Co. Mazidagi Phosphate Plant is in the district of Mazidagi in Mardin in south eastern Turkey and was acquired by Cengiz Holding in 2011. The plant will generate all the power it needs and it is anticipated that 85% of its raw material requirements will be met from within Turkey. It is the only fertilizer plant in the region, and at full capacity will have annual production of more than 550,000 tons of phosphate rock and 750,000 tons of fertilizer, enough to meet the entire fertilizer requirements of the Harran Plain.

## CHALLENGE

The Eti Bakir Co. Mazidagi Phosphate Plant was previously using analogue repeaters and radios to provide communications for workers, but they were unable to provide the secure, instant, reliable communications required to manage operations and protect employee safety. In addition, the old system was not able to provide some of the advanced functionality required such as voice recording, telephone connection and GPS location monitoring.

The Mazidagi Phosphate Plant represents a challenging environment for any equipment used: it is spread over a large area with multiple concrete/steel buildings and structures, indoor, outdoor and underground areas and there are many potentially hazardous zones so it was important that any new devices should be certified intrinsically safe for use within those areas. Devices also need to be of high quality and rugged enough to withstand the everyday knocks and drops encountered across the plant.

Workers at the plant need a high performance, high quality two-way radio system to provide resilient communications that can be relied on all day, everyday.

Cengiz Holding reviewed different radio technologies and suppliers before selecting a DIMETRA Express TETRA network and portable radios from Motorola Solutions, installed and supported by long-term partner Novatel Communications Solutions.

Novatel has been partnering with Motorola Solutions since 1998, and has extensive experience across a broad range of both analogue and digital two-way radio technologies and systems, including the latest DIMETRA TETRA portfolio. Novatel's broad experience of other industries and plants means that they have been able to build a strong relationship with Cengiz Holding as their professional communication partner.

Ayhan Tosun, Novatel Communications Solutions Sales Manager, comments "As a leading supplier of radio equipment in Turkey, it is important to Novatel that we work with the best equipment manufacturers, which is why we have partnered with Motorola Solutions for over 20 years to provide our customers with high quality networks designed, installed and maintained by our team to meet their specific business needs."

## CUSTOMER PROFILE

### Organisation:

Eti Bakir A.Ş. Mazidagi Phosphate Plant

### Industry:

Chemical Manufacturing

### Location:

Turkey

### Partner:

Novatel Communications Solutions

### Motorola Solutions Products:

- DIMETRA Express MTS4
- >200 MPT3550 for use in non-IS zones
- >20 ST7500 compact portable radios for use by the management team
- 36 MTM5400 mobile radios for use in vehicles, the control room and PBP area (Phosphate Beneficiation Plant) above and below ground
- >100 MTP8550Ex ATEX/IEC Ex certified portable radio for use in potentially explosive areas
- Selection of headsets, earpieces, RSMs, batteries and chargers

### Applications:

- Telephone interconnect
- Voice recording (Jasco)
- GPS location tracking (HermesTRX)

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**"I believe that DIMETRA Express is a sophisticated and well designed system that provides us professional work support in terms of operations efficiency and staff safety. At Eti Bakır Co, we have several distinct zones that include a copper mine, together with nearly 600 staff so providing strong and healthy communication is the most important part of our job. Therefore, we have selected Novatel Co. as a long term partnership to improve our professional communication options. Thanks to the system, we can control vehicles speed and location in the area. Overall, the DIMETRA Express system is helping us to run the plant more easily, and fast communication with workers is protecting their safety. Workers and managers are very happy with the system performance, leading to us increasing the number of radios being used."**

Ayşe Elif Karan, Computer Eng. responsible Motorola Solutions Systems, Eti Bakır Com



## SOLUTION

A Motorola Solutions DIMETRA Express MTS4 TETRA system has been deployed at the plant, equipped with the system switch and three base radios to give the call capacity required. This one-box system was quick and easy to install and set-up, reducing deployment time and complexity.

Workers are equipped with a range of Motorola Solutions TETRA portable radios to provide reliable, instant communications across the plant. Teams working in potentially explosive environments use the intrinsically safe ATEX/IEC Ex certified MTP8550Ex fitted with a separate large Push-to-Talk (PTT) button and heavy duty headsets. The PTT button makes it easy to make calls even when wearing gloves and the headset provides hearing protection against high noise levels whilst allowing the user to make and receive calls. Workers in non-ATEX zones are issued with the robust, easy to use MTP3550 portable radio fitted with a lightweight headset or Remote Speaker Microphone (RSM) depending on the individual work environments. These help make the radios easier and safer to use, reducing background noise and allowing workers to make and receive calls hands-free. Unit managers and the general manager carry the compact ST7500 that provide a fully featured radio in a small and discreet form factor.

All the portable radios are sealed against damage from water and dust so can withstand the conditions encountered across the Mazidagi plant.

The DIMETRA Express system features telephone interconnect, providing authorised radio users with the ability to make and receive telephone calls such as to other locations or organisations, senior management, or emergency services.

In the control room, two software applications have been installed to allow all voice calls on the network to be recorded and to monitor vehicles within the facility using GPS tracking.

## BENEFIT

The new system is providing instant, reliable communications for workers and managers, helping them to run the plant smoothly and respond more quickly if incidents occur. The different radio form factors available mean that each user can be given the right model to meet their specific needs and the addition of accessories makes the radios even easier to use. In particular, the use of headsets means that workers can clearly hear messages and instructions over their radios hands-free, even in noisy areas of the plant.

Calls can be made between individual users for private messages, or supervisors and dispatchers can instantly communicate with entire teams using group calling. In this way, calls can be directed to the person or people who need to be involved without distracting others, and the loud clear audio means users can easily hear and understand messages.

Control room staff use the GPS location tracking application to remotely monitor movements of vehicles around the plant in real-time, helping improve operational efficiency and worker safety, and the call recording application provides a robust audit trail and helps with staff training after any incidents.

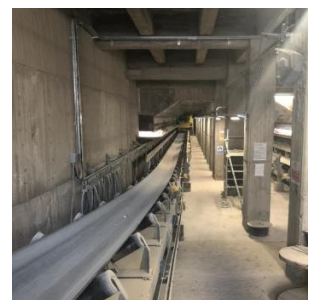
By providing robust and reliable communications with call recording and GPS location tracking, the new system is helping to enhance the efficient and effective operation of the plant whilst improving worker safety.

### Usage:

- Voice communications for workers and managers across more than one million square metres of the facility
- Group calling, individual calling and dispatch
- Full duplex telephone integration
- Voice recording of all calls on the network
- Vehicle tracking using GPS

### Benefits:

- Effective, clear, reliable, secure communications across the plant
- Choice of radio form factor for different workers
- ATEX/IEC Ex models allow workers in potentially explosive environments to keep in touch with other workers
- RSMs, headsets and earpieces improve usability and performance
- Built-in GPS allows vehicle tracking to improve safety and efficiency
- Centralised voice recording gives audit trail and helps staff training post-incident
- Flexible, easy to deploy network is designed to scale over time as business needs change



For more information on DIMETRA Express, visit [www.motorolasolutions.com/dimetraexpress](http://www.motorolasolutions.com/dimetraexpress)

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