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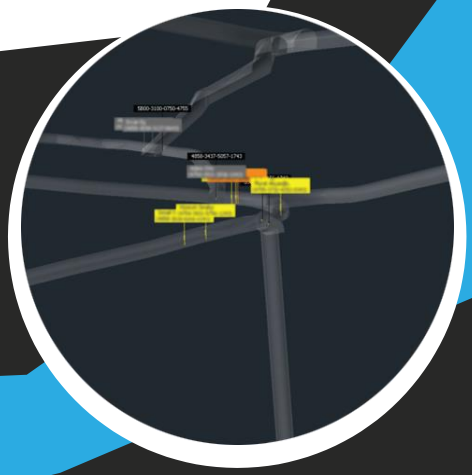
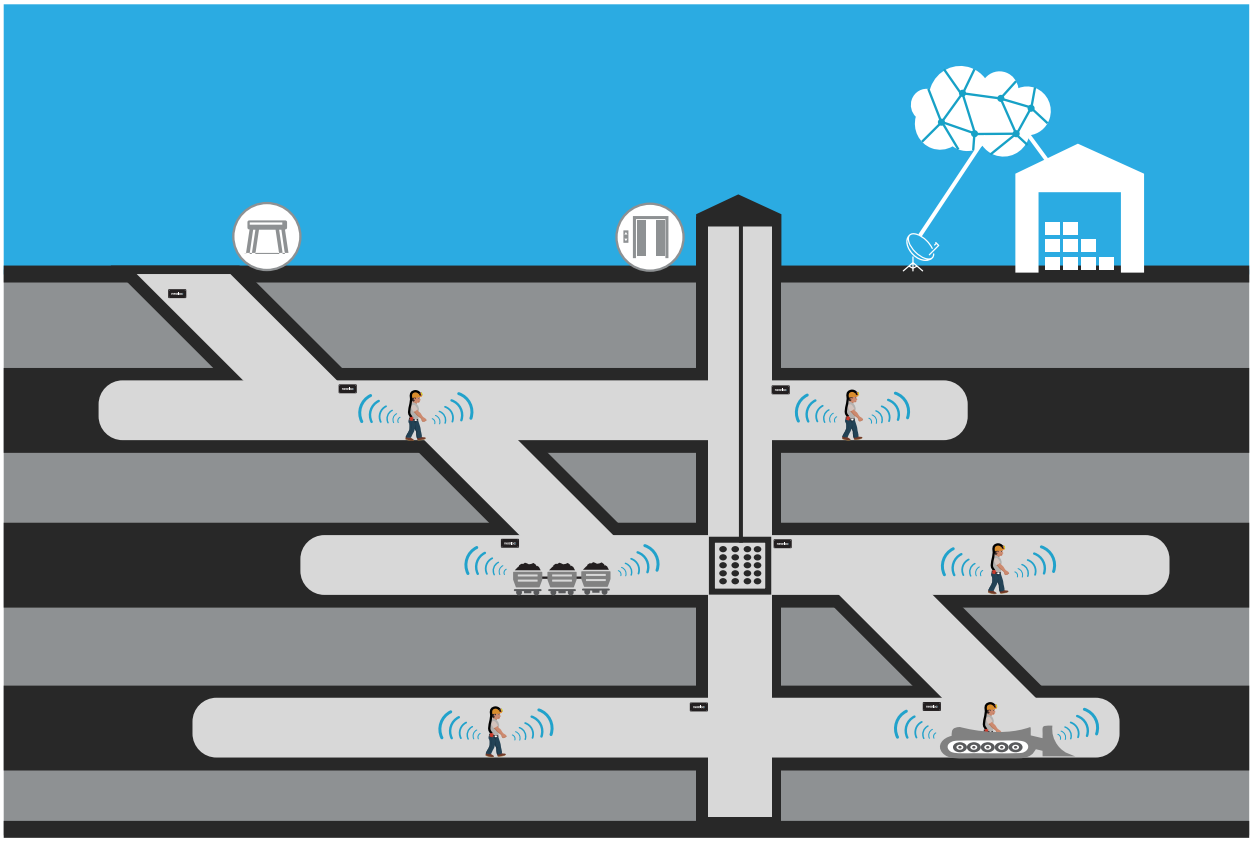
UNDERGROUND ASSET TRACKING SYSTEM



Nearloc Underground Asset Tracking System

Nearloc Underground Asset Tracking System works with Ultra Wide Band (UWB) technology. Main function of the system is constantly communicating with the tracking device on the asset to be able to detect the location instantly in high accuracy.
Nearloc Underground Asset Tracking System working principle is precise measurement of the distance between Head Lamp Personnel Tracking Devices and installed Anchor Units in an order.
In this way, real-time monitoring of the staff from the surface is provided.



Currently, in more than 50 underground mining facility throughout Turkey, about 3,000 personnel are supported by the Nearloc Underground Asset Tracking System are being monitored.

Criteria Based on the Design and Production of Nearloc Products

Suitability with mining conditions

Boxes, devices and cables used in Nearloc products are designed and manufactured for the hardest mining conditions.

Work Safety

Products and software has been designed and manufactured to assist activities such as search and rescue operations in underground mines.

Productivity

Nearloc Underground Asset Tracking System helps to increase efficiency by helping to control, coordination, and orientation of employees.

Stability

Nearloc Underground Asset Tracking System, thanks to the optional ring structure of the fiber and energy infrastructure continues to work in case of any damage.
On any Anchor Unit or cable the malfunction that may occur does not prevent the rest of the system from working.

Communication

Anchor Units in the Nearloc Underground Asset Tracking System also provides wireless area network. With the fiber optic based infrastructure audio and video calls can be made via mobile phone or VOIP radio standart by existing internet access or local network. (WhatsApp, Facetime, Zoiper vs.)

Flexibility

Because of the socketed future of devices they can be easily removed and relocated. By this way in case of dredging, fortification change, gallery advance, etc. operations is reduced and personnel can continue their work without time loss.

Fault Detection and Service Ability

When any device in the system has malfunctions or communication is interrupted it is instantly appreciable and can be replaced easily.

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Anchor Unit

Anchor Units are constantly communicates with the tracking device and placed at the enterance of the underground mine and inside at certain distances.

Anchor Units can be easily installed through the capped industrial sockets on it. Also can be dismantled, replaced and can be kept in the underground mine for a long time with its socket's cap closed.

Thanks to its small dimensions, it does not cause any narrowing in the gallery section. The attachment designed to enable it to be easily mounted on the fortification, rock, ceiling or side wall in the gallery.

Each Anchor Unit provides wireless internet access with the Wi-Fi module integrated in the device.

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Personnel/Asset Tracking Device

Integrated structure in the miner lamp, eliminates problems like the mobility reducing and time wasting in operations for carrying or charging devices such as lamp and tracking device separately.

Case of the device is made of flame and impact resistant material. A Led indicator in 3 different colors and a holder for easy attachment to the working belt of any thickness placed on the device case. Head Lamp Personnel/Asset Tracking Devices is rechargeable via charging port on lamp.

To provided tracking the serial number on the device and the name of the employee who is using the device are matched over the software. In dangerous situations alarm and warning signal can be given to the personnel through the system with light indicator on the device.

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Auxiliary Communication Unit

Auxiliary communication unit is the component that provides stability, communication and the developability features. System inside the outer box acts as the hub for between 4 8 Anchor Unit and also connections can be made for devices such as IP phone, IP camera, alarm and warning light. By these features Communication Unit turns into data collection and transmission center for all kinds of technological devices to be used in the underground mine.
All of the components inside the Communication Unit are industrial products manufactured for hard conditions.

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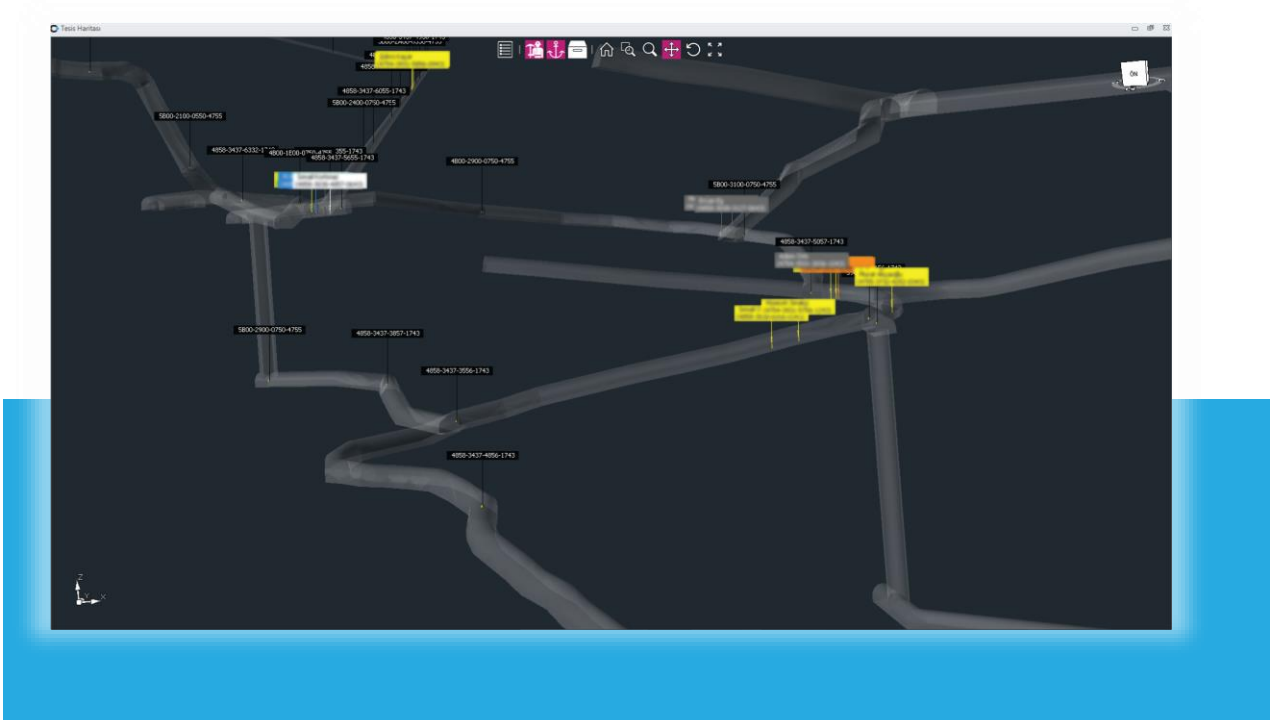
Software



The underground mine can be tracked on the 3D map with user-friendly Windows-based software.
The map is viewed from all angles so the location of the personnel can be easily understood even in the most complex underground mine plans.

- The software can be accessed from anywhere via internet
- Person name, surname, age, duty, qualification (education, experience etc.) can be entered in the ID card information.
- Entry and exit times of personnel can be saved and reported
- The location information of the desired person or group within the desired time interval can be reported.
- A warning is given when the personnel is motionless.
- LED light alarm signal can be transmitted to personnel.