



# Mining Locate: Proximity Detection

Mine Operators are looking for the safety feature of Proximity Detection to:

- Reduce the likelihood of vehicle incidents underground
- Increase Operator awareness and trust in the system

Cohda Wireless delivers Proximity Detection capabilities as defined in ISO21815-1 as a system which detects intended objects (or Remote Objects) in the surrounding space (around the Local Object) by ranging between objects.

The Cohda Locate Mining product achieves this by using peer to peer communication, providing proximity between:

- 1) Vehicle to Vehicle (V2V)
- 2) Vehicle to Personnel (V2P)

Advantages of Mining Locate include, but not limited to:

- Operates in challenging environments with no GNSS
- Provides ranging to line-of-sight and non-line-of-sight remote objects
- V2V detection a minimum of 100m away with non-line-of-sight
- V2P detection a minimum of 60m away with non-line-of-sight

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## Vehicle to Vehicle

For V2V interactions, vehicles are fitted with XBU-V's or OBU-V's that communicate with other similarly equipped vehicles. The communication allows for Time of Flight (ToF) measurements to be regularly taken between vehicles.

Working with Fleet Operators, Cohda Wireless provides data through a HMI API to communicate to the Vehicle operator:

- Remote object detection, even when not in line-of-sight
- Distance and direction for remote objects
- Individual identification of remote objects
- Sound alarms to alert operators to critical situations to help maximize operator awareness

## MK5 XBU-V or OBU-V

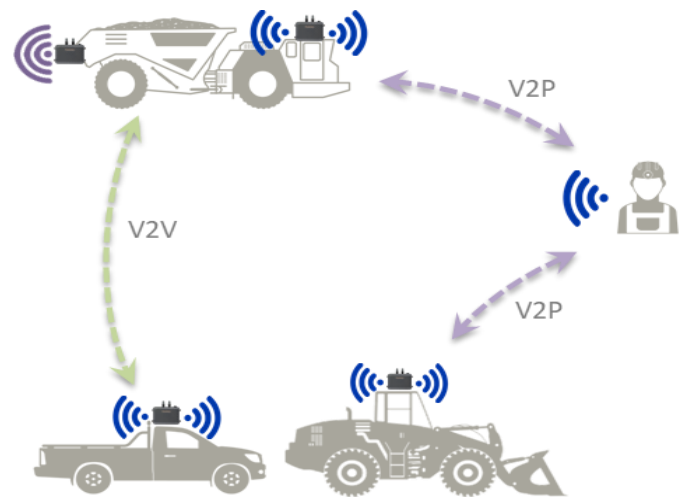
Designed for use underground, our XBU-V and OBU-V are based on our MK5 OBU and RSU products ruggedized for the harsh conditions of underground mining operations.

Baseline Mining Locate firmware provides:

- Proximity detection via ToF ranging, over V2X peer-to-peer communications channels
- Self-diagnostics (including antenna health)
- Remote Object tracking, and reporting through a HMI API
- Event & data logging
- IPv6 data service
- OTA firmware updateability (back-out capable)

## Vehicle to Personnel

To improve safety as well as productivity, the XBU-V and OBU-V can provide ranging to people via personnel tags embedded in existing equipment i.e. cap lamps. Personal Tags containing Cohda Locate software are available through a 3<sup>rd</sup> party.



XBU-V



OBU-V

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