Proximity Detection & Collision Avoidance

Strata’s solutions for surface, underground, and surface-to-underground
Strata Worldwide has years of R&D and real-life experience with proximity detection and collision avoidance technologies. Working closely with mine managers and personnel around the world, the company continues to expand and enhance its safety technologies.

**HazardAVERT®** - Near-field electromagnetic detection, alarm and interlocking system for surface and underground

**HazardAVERT 360™** - Multi-range detection and alarm system for surface only
Strata HazardAvert 360°™ is a surface proximity detection and collision avoidance system that seamlessly combines multi-range detection technologies, to provide close range, extended range and full-view awareness while working in and around heavy and/or highly mobile equipment. It is designed to detect equipment and pedestrians in its vicinity and emit warning alarms if there is any potential danger of collision.

### System Components

#### ON-DASH LED DISPLAY SCREEN
- Processing unit of the system with a 7" LED screen
- User interface includes full circumference distance markers for 360° visual display of other vehicles and pedestrians
- Built-in sounder alarms if potential collision is detected
- Input button to enable temporarily disarm of alarms – operator command

#### CONCENTRATOR
- System bus - connects system antennas and feeds data to the On-Dash Display

#### OMNI DIRECTIONAL ANTENNAS
- Precise triangulation location for short range detection

#### GPS ANTENNA
- Precise relative location for far range detection

#### PERSONAL ALARM DEVICE (PAD)
- Personnel-worn devices that are detected by the system and visually and audibly warn pedestrians of potential vehicle-to-person accidents
- Lightweight and ergonomically designed to be worn on the belt or arm
- Includes flashing LED light and in-built audible sounder
360°<sup>TM</sup> Features & Capabilities

- Multiple detection technologies for expanded coverage and safety overlay
- Vehicle-to-vehicle detection
- Vehicle-to-personnel detection
- Vehicle-to-fixed asset detection
- Equipment and personnel function together without conflict
- Individual recognition and identification
- Audio and visual warnings to all parties involved
- Real-time monitor displays in vehicle cab
Vehicle-to-Vehicle Detection

HazardAVERT 360°™ system components can be installed on any type of mobile equipment and individual workers wear a Personal Alarm Device (PAD). The system begins identifying other vehicles and displaying their locations on the On-Dash Display when they are within 1000 ft (300 m). If the system detects a potential collision, it will audibly and visually alarm and simultaneously alert all vehicle operators involved.

Vehicle-to-Person Detection

Pedestrians wearing a PAD and positioned within 165 ft (50 m) of the equipment, will appear on the On-Dash Display and be identified as a pedestrian. The system detects the PAD location and determines if there is potential danger. If danger is imminent, both the pedestrian and equipment operator will be immediately alerted.

Warning Alerts

The On-Dash Display in the vehicle cab(s) act as a warning device as well as a location display screen. When in warning-mode, the screen will flash red and an audible sounder will alarm to alert the driver(s) of potential collision.

Pedestrian PADs include a flashing LED warning light and audible sounder. PADs are lightweight and ergonomically designed to be worn on the belt or arm. A flashing LED light on the front of the device and an built-in audible alarm alert the pedestrian.

Equipment operators may manually override warning alarms once they have been activated in order to enable other vehicles and/or pedestrians to approach the equipment as needed. Operators acknowledge their presence using the On-Dash Display screen and temporarily disabling the alarm.
INTEGRATING THE CAPABILITIES OF HAZARDAVERT 360°™ & HAZARDAVERT® ELECTROMAGNETIC

HazardAVERT 360°™ and HazardAVERT® electromagnetic can be integrated to operate in conjunction and display information on a single user interface. Together the systems provide comprehensive detection and alarm capabilities, including the ability to automatically slow, stop or disable the equipment in an emergency situation.

The system integration is seamless, requiring no interaction or input from equipment operators during operations.
HAZARDAVERT® SEES WHAT PEOPLE CAN’T, AND REACTS WHEN PEOPLE DON’T.