The background of the entire page is a dark, grainy photograph of a coal mining environment. In the center, there is a large, dark, rectangular piece of machinery, likely a proximity detector, with some glowing orange light on its side. The text "PROXIMITY DETECTION SHAPES UP GLOBALLY" is overlaid in large, white, bold, sans-serif capital letters.

# **PROXIMITY DETECTION SHAPES UP GLOBALLY**

The push for better worker safety  
solutions drives technological innovations

A small, rectangular, black proximity detector with a glowing yellow light on its front, mounted on a dark surface.

**IntelliZone®**  
**PROXIMITY DETECTION**

The #1 proximity detection system in the U.S.  
and South Africa is now available worldwide

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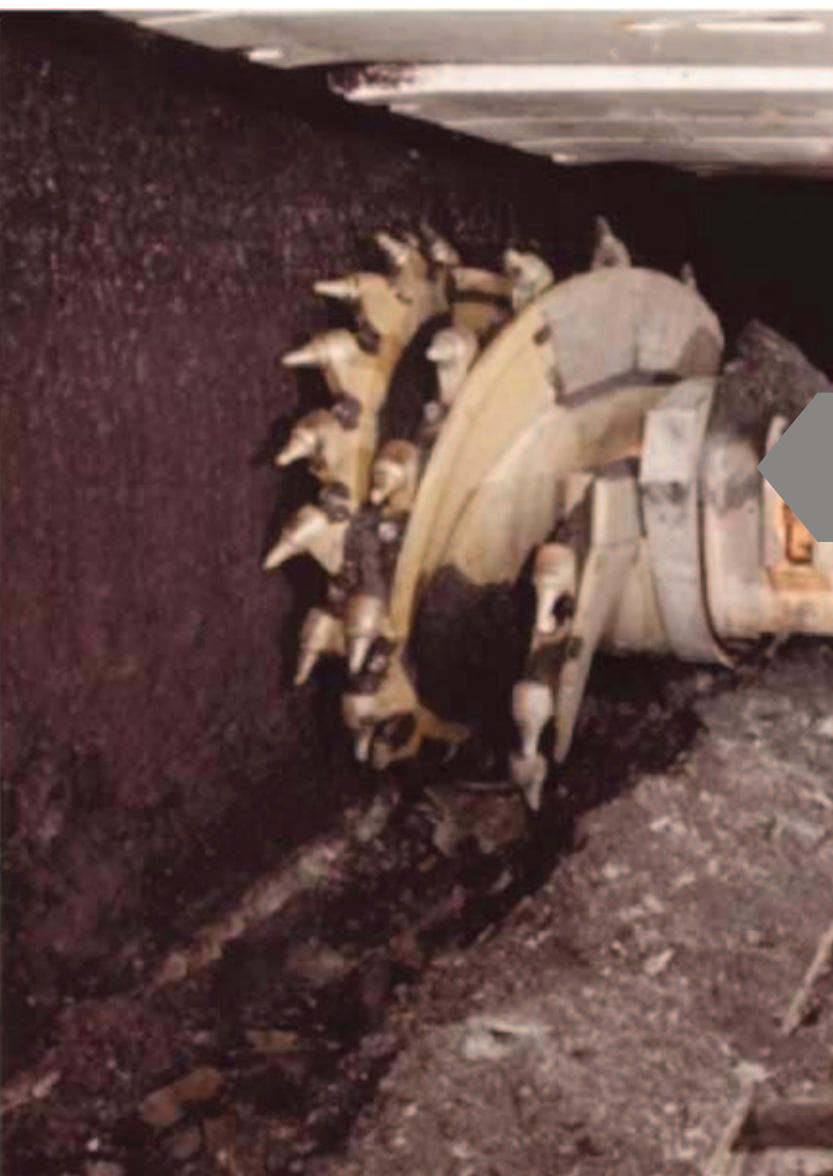
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### Matrix

Matrix Design Group LLC is the safety and productivity technology leader for underground mining and industrial applications. Its innovative product line includes systems for proximity detection, communications and tracking, atmospheric monitoring, lighting and cameras.

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IntelliZone provides a safer environment for miners without compromising productivity. Shaped zones conforming to the mobile equipment's shape can be precisely established.

# Proximity detection shapes up globally

**I**n the past two years, laws requiring coal mines to have proximity detection on mobile machinery have been instituted in the U.S. and South Africa. These new mandates are putting a global spotlight on the need for worker safety solutions. The product selected most often to meet these deadlines, Matrix's IntelliZone, has recently received IECEx approval. This system is now available in the Australian market and expanding to other countries worldwide.

IntelliZone warns personnel if they are in close proximity to mobile machinery or entering an unsafe working area. Its control system interfaces with machinery, providing the ability to slow down or stop a machine should personnel move into Warning or Shutdown Zones designated around it. Unlike bubble-zone systems, IntelliZone's proprietary shaped-zone technology allows mines to set custom perimeters around the machines, minimizing nuisance alerts and allowing increased productivity for mines. The system also enables zones to expand and contract based on a vehicle's speed and direction and only into the path of travel, instead of overlapping into crosscuts or cutouts.

"Precise worker location teaches support personnel where to position themselves to be clear of danger and allow the equipment to do its job," said David Clardy, president of

Matrix. "IntelliZone operating data from the last 10 years indicates little-to-no drop in production while providing outstanding worker benefits."

## CELEBRATING 10 YEARS OF INNOVATION

Originally introduced to the American market in 2009, IntelliZone was the culmination of a three-year effort to create a next-level proximity detection system for underground mines. When the patent was approved for IntelliZone's proprietary technology, for the first time, ultra-precise tracking and the ability to define customized shaped zones around each machine was available. This X,Y tracking was revolutionary in the mining market, particularly for MSHA-approved systems.

Before IntelliZone was introduced, only "bubble" zone technology was available. These football-like shapes expand wider as the machine's zones extend forward, detecting workers on the sides or in crosscuts who are actually in a safe location. In contrast, IntelliZone's SharpZone technology enables precise worker location around a piece of equipment.

In 2013, Matrix introduced IntelliZone Gen 2, which delivered increased range allowing for use on faster moving vehicles, provided a reduction of electrical noise interference and included a number of features to minimize nuisance trips. An in-cab display for visual indication of zone breaches was

also added as well as visual and audible zone alerts on the wearable locator. To ensure system reliability on equipment, components are integrated into the machine and kept inside the machine frame, which means that cables are protected and not exposed.

Because Matrix is focused on continuous innovation, it has recently introduced a number of new features allowing for additional signal diagnostics, machine angle detection and reduced EMI interference. Matrix will soon be releasing a Status Screen that provides detailed on-board diagnostics, critical for quick troubleshooting and maintenance, and a new longer-range driver for higher speed applications.

Today, IntelliZone can be found on continuous miners as well as many other mobile machines in underground mining environments, including shuttle cars, roof bolters, LHDs (load haul dumps), battery-powered scoops and battery haulers. The system has also been successfully installed on articulating haulage. In addition to coal mines, IntelliZone is being used in a variety of soft rock mines and tunneling operations.

“Shaped zones are data-proven to provide a safer work environment underground without a lot of nuisance trips or slow-downs,” said Brian Jones, director of Business Development. “And IntelliZone’s robust component construction provides greater uptime in the toughest environments.”

### SAFE PRACTICES

IntelliZone not only provides proximity warning and equipment shutdown when necessary, the system is primarily intended to enhance miners’ awareness of potentially dangerous areas around working machinery and instill safe operating practices. Ultimately, IntelliZone’s components, durability and reliability provide the lowest cost of ownership in coal mine proximity detection. Its suite of exclusive features balances safety and production, its precision raises a mine’s safety factor, and it is now IECEx-approved.

### IECEx APPROVAL

IntelliZone’s IECEx approval was acquired from the Department of Industry’s Mine Safety Technology Centre in Thornton, NSW, Australia. This certification allows Matrix to enter the Australian marketplace and sell worldwide in other countries that follow IECEx standards. IECEx is the IEC system for certification to standards relating to equipment for use in explosive (“Ex”) atmospheres.



Green Zone



Yellow (Caution) Zone



Red (Stop) Zone





IntelliZone components are designed to last longer in the harsh operating environments of underground mining.

### MATRIX DESIGN COMPANY

Matrix is a safety and productivity technology leader for underground mining and industrial applications. Its innovative product line includes systems for proximity detection, communications and tracking, atmospheric monitoring, lighting and cameras.

Since 2006, Matrix's core business has been mining safety. The company designs, manufactures, sells and supports a range of cost-effective new-tech products. While best known for its IntelliZone proximity detection system, Matrix has expanded beyond the underground coal mining industry and now sells into industrial markets globally. Today, the



IntelliZone works in all underground mining environments and can be installed on any type of mobile equipment – standard or articulated.

company has introduced – and continues to launch – suites of leading-edge products that help its customers operate more safely and productively.

Headquartered in Newburgh, Indiana, Matrix has offices in Lexington, KY, Johannesburg, South Africa and service locations throughout its mining regions, as well as distribution partners around the globe.



Two IntelliZone systems can combine to create, in this example, a Loading Mode zone where an operator can move closer within a green zone during offload. The CM and Shuttle Car systems will precisely track all worker locations within the zone's set-up.