To whom this may concern.

Relevant to underground mine rescue equipment and technology.

This is presentation of technology the we have to offer in the communications side of mine rescue and personnel locating

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- **Mine Safety Systems**
- **Minesuite**

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Presenting

• Dewayne Hannah, P.E.
• President & Sr. Engineer

• Donald Gilroy
• Senior IT Specialist
Mine Safety Systems

- Communications
- Gas Monitoring
- Proximity Protection
- Vehicle Alert / Collision Awareness
- Real Time Data Reporting
- Equipment And Personal Tracking
- Preventive Maintenance Equipment lockout
Communications

• Wi-Fi
• Hard Wired Phone
• Leaky Feeder System
• Redundancy
• Data Logger

  Digital Video For visual monitoring of critical operations and areas
  ➢ Voice over IP For voice communication over Internet Protocol networks
### 5GHz Structured Mesh™

<table>
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<tr>
<th>Features</th>
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<tr>
<td>5GHz Structured Mesh™ backhaul</td>
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<tr>
<td>Self-Healing, Self-Forming</td>
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<td>Session-persistent roaming</td>
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<tr>
<td>Integrated 802.11 a/b/g access</td>
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<td>AES-CCMP encrypted backhaul</td>
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<td>WPA (Personal and Enterprise) security</td>
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<td>Multiple-SSIDs with 802.1q VLAN support</td>
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<td>Independent Security profile per SSID</td>
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<td>Remote Management and Monitoring</td>
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<td>Power over Ethernet</td>
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<td>NEMA rated outdoor enclosure</td>
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### WI-FI Wireless Mesh Network

**Self-Forming – Plug and Play**

No tedious point-and-configure procedure needed. Units automatically form the network upon power up. Network can be extended simply by powering up more units.

**WI-FI Transmitter**

**Machine Positioning without GPS**

**Solar Power Backup power**
FlexAlert features –
- Low Cost
  Mines of ALL sizes can afford it
- Positive Action
  One alarm, warns ALL personnel
- Easy to install
  Only requires 50 to 150 meter surface loop
- Safe
  Low power 50 to 450 watts, dependant on size of mine
- Miniature receiver
  Surface mount components enable installation inside most cap lamp batteries.
- Two Visual Warnings
  Cap lamp ‘flashes’ indicating evacuation. Plus a Hi Intensity LED as a back up
- Three models
  Cap Lamp, Fixed (wall mounted) and Portable, loud sounding audio-visual versions
- Easy to operate
- Virtually maintenance free
Swipe Card Electronic Tag Boards

The swipe card solution provides a flexible base for a variety of functions such as:

- On-Site Fuel Dispensing and Control
- Payroll
- Site Access and Security
- Electronic Tag Board
Gas Monitoring

Transmitter IR Ex Inline
  CH4

Transmitter IR CO2

O2 LS Measuring Head
Tracker Tagging System
Vehicle Alert System

System consists of:

- RF transmitter unit or active tags for smaller LV
- RF receiver or tag reader unit for larger Truck or LHD vehicle
- RF receiver or tag reader unit at 3 level and 21 fuel bay.

The system works by:

- The transmitter transmits encoded message to receiver if a LV is within defined distance containing vehicle number
- The receiver gives a warning alarm and displays and identified PV vehicle number on LCD display and stored in the system
- Alarm is acknowledged by large vehicle operator.
Vehicle Alert System

- LIGHT VEHICLE TAG TRANSMITTER
- DUMP TRUCK ALLOWS LV TO PASS
- DUMP TRUCK RECEIVER REGISTERS LV PRESENCE
Vehicle Alert System

LHD’s / Trucks:

• RF receiver or tag reader unit for larger Truck / LHD vehicles
The CAB Lifeline is an escape rope designed to help evacuate an underground mine in the event of a fire or explosion. Research by the U.S. Bureau of Mines has shown that the presence of a rope guide in dense smoke can improve the chances for a successful escape when a fire breaks out in an underground mine. The CAB Lifeline, with its sturdy directional cones, will help lead employees to the slope and shaft rather than getting lost or confused in an actual emergency situation. Each spool contains 300 metres of 6mm yellow polypropylene with directional indicators installed at 30 metre intervals. Corrosion resistant thimbles, oval sleeves and quick links are installed on each end for the quick and secure attachment of sections. Can be custom made to an individual mine specification.

CB945 300 metres CAB Lifeline with reflectorised cones each 30 metres 10kg
Minesuite Applications

Underground:

- Underground Fleet Management
- Anti Collision Systems
- Maintenance Management
- Equipment Tracking
- Product Quantity and Quality Tracking
- Fuel Monitoring systems
- Reporting
- Gas and Ventilation monitoring
- Personnel Tracking
- Redundant Communication Systems
- WI-FI, Hardwire, & Wireless
Minesuite Applications

Open Pit:

• Open Pit Fleet Management Systems
• High Precision GPS Bucket Guidance
• High Precision GPS Dozer Guidance
• High Precision GPS Drill Guidance
• Fuel Monitoring systems
• Down time delay recording
• Maintenance Management
• Equipment and Personnel Tracking
• Stockpile Management
Minesuite Applications

Process Plants:

- Wash Plants, Mineral Processing and Materials Handling
- Stockpile Management
- Plant Performance Monitoring
- Interface to Plant control Systems
Features Of MineSuite

- Interfaces to other mine systems
- Automatic Alarms and environment set points
- Fully integrated reporting tool, user can create own reports
- Rugged military tested hardware
- All functions of MineSuite are user configurable, Minesuite, Touch Screens, Reports, KPI’s.
Examples of User configured reports from other sites
Who Uses MineSuite

Underground:

• BHP Billiton
• Anglo Coal
• Xstrata
• Assmang
• Pasminco
• Centennial Coal
This Package Can Be Customized To Fit Any Underground Or Surface Mine

The Main Advantages Of This Package Is That All of the Items Mentioned Can Be Linked To A Centralized Computer Accessed From Anywhere In The World

This Package Can Be Added To Or Upgraded At Any Given Time

Support For These Products Is Readily Available

We Will Be Happy To Discuss All Aspects And Questions
Minesuite & Maptek

- 2001 Maptek Purchased Advanced Systems Integration (Product is Minesuite)
- 2002 Maptek Establishes Minesuite North America
North America / Europe

Luke Chorley – Minesuite Technical Manager North America
Dewayne Hannah Eastern Representative
Donald Gilroy Senior IT Specialist

Hannah Engineering
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- End Of Presentation -