



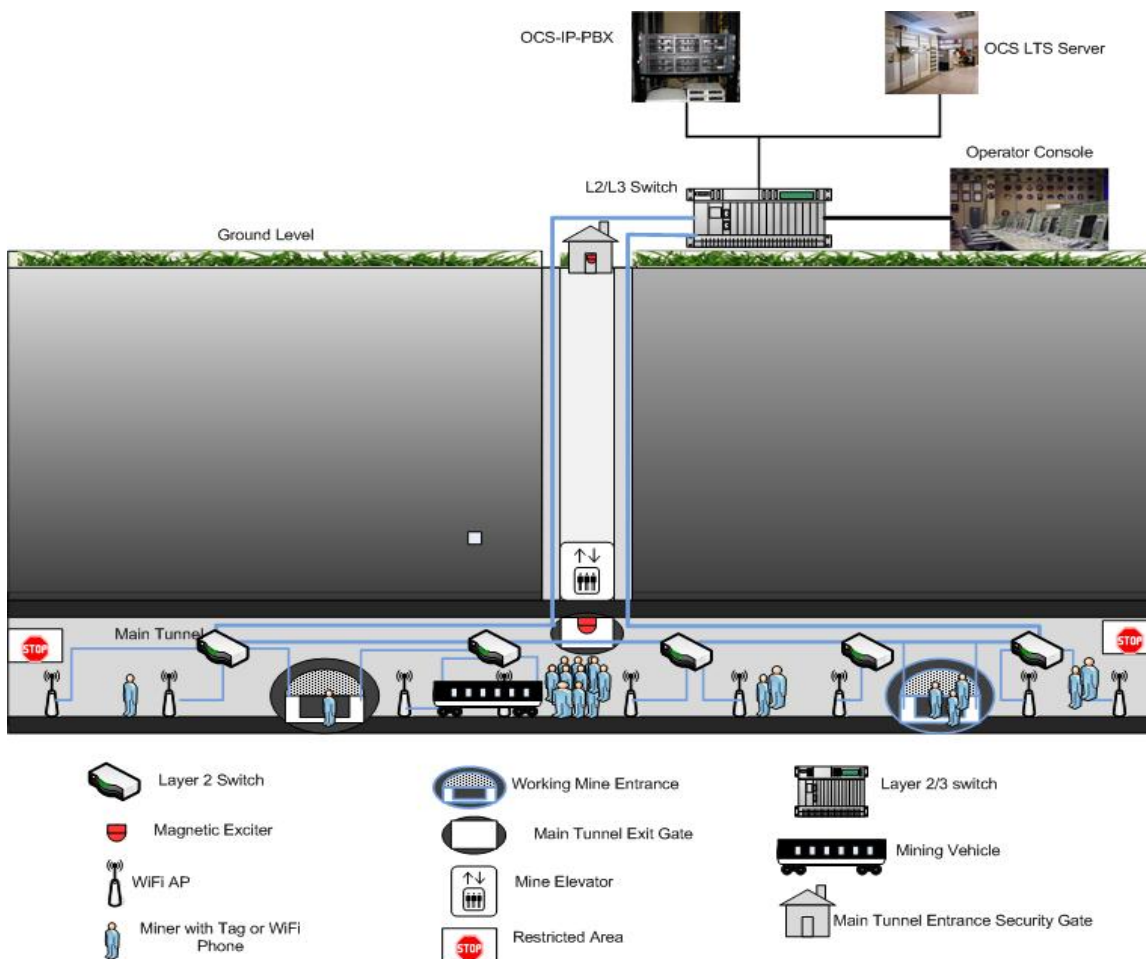
OpenCon Systems, Inc.

WORLDWIDE COMMUNICATION SOLUTIONS



A reliable communication and Real Time Location Tracking system is vitally important for safe operation of mining industry. Of all the communication technologies that are available today, WiFi based systems provide the most cost effective, reliable and robust two-way communication for the mining industry. WiFi based systems provide the necessary infrastructure to integrate voice, data and location tracking, all in one unified communication platform.

OCS Location Tracking System is a WiFi based system that includes all the components and subsystems that are required. It includes IP PBX, WiFi tags, WiFi phones, Layer 2/3 switches and not to mention a state of the art Receive Signal Strength Indication (RSSI) based location computational engine. Figure below depicts the various components of LTS deployed in a coal mine.



## OCS Location Tracking System

### Key Features

<p><b>WiFi Tags, Phones</b></p> <ul style="list-style-type: none"> <li>• Supports 802.11b/802.11g standards</li> <li>• Configurable RSSI reporting interval</li> <li>• Push-button for alarm generation (tags only)</li> <li>• Alert text message and tones on WiFi phones</li> <li>• Evacuation route guidance on WiFi phones</li> <li>• LEDs and Audible Tone for Alerts from Operator's console</li> </ul>	<p><b>System Capacity</b></p> <ul style="list-style-type: none"> <li>• Number of WiFi Tags and Phones Supported: 5000+</li> <li>• Real time location updates every 10 seconds</li> <li>• Number of concurrent voice calls- 20 to 100 (internal + external)</li> <li>• Text Messages: 500 to 5000 Messages/minute</li> </ul>
<p><b>OCS IP-PBX Features</b></p> <ul style="list-style-type: none"> <li>• Call Transfer, Call Hold, Call Park, Pickup Groups, Intercom</li> <li>• DID, Forwarding, Speed Dialing, Call-Waiting</li> <li>• 3-way conference, Barge-in</li> <li>• Music on hold, Caller ID</li> <li>• Auto-attendant</li> <li>• Support Text messaging</li> </ul>	<p><b>LTS Engine</b></p> <ul style="list-style-type: none"> <li>• Real time location computation based on RSSI reports from tags and phones</li> <li>• Real-time radiomap calibration utility</li> <li>• Tunable heuristics and fuzzy logic to improve location estimation accuracy</li> </ul>

<p><b>Special WiFi Tags</b></p> <ul style="list-style-type: none"> <li>• Alarm/Buzzer tag to provide audio/ Visual alert message indication from Control room</li> <li>• Fixed alarm/buzzer tags used to assist dynamic radiomap calibration</li> <li>• Specially designed WiFi tag that can Operate from a vehicle moving at the speed of 40 Kmph.</li> </ul>	<p><b>Magnetic Exciters</b></p> <ul style="list-style-type: none"> <li>• ISO24730-2 compliant</li> <li>• Radio coverage area from 3 meters to 8 meters</li> <li>• WiFi capability to exchange Information with LTS server</li> <li>• Integrated audio-visual alerts for illegal entry into restricted areas.</li> </ul>
<p><b>Operator Console</b></p> <ul style="list-style-type: none"> <li>• Graphical display of location of miners</li> <li>• Send/Receive alarm messages</li> <li>• Integrated voice communication with WiFi Phones</li> <li>• Administrative interface for WiFi tag/ phones and LTS server</li> </ul>	<p><b>Network Equipment</b></p> <ul style="list-style-type: none"> <li>• Commercially available Layer 2 and Layer 3 switches</li> <li>• Ruggedized WiFi AP</li> </ul>