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Customer Benefits

- ✓ Reduced hardware expenditure
- ✓ High reliability GPS
- ✓ Elimination of downtime/ increased productivity
- ✓ Improved network overhead

Improving Efficiencies While Reducing Cost

A mining operator was deploying earth-moving equipment to the outer reaches of their wireless network to perform reclamation work. Operators of this equipment - as well as drivers in certain areas of tailings - were frustrated that the high precision GPS fix was frequently unreliable which resulted in work delays. 3D-P was asked to identify what additional hardware might be necessary to extend network coverage and ensure reliable delivery of GPS corrections so that high precision equipment could operate continuously and dependably.

While assessing the problem, 3D-P realized that although network coverage in the reclamation and tailings areas was marginal, it was still sufficient to provide connectivity. The network, however, was operating very near capacity with many clients and multiple high-bandwidth applications. Consequently, GPS corrections - which are low priority broadcast traffic - were being regularly discarded.

While new network hardware could have resolved the problem, it was deemed an unnecessary expenditure. 3D-P instead proposed a GPS publish/subscribe implementation which required no new hardware, reduced overall network traffic, and ensured more reliable correction delivery to eliminate work delays.

Improved Reliability With The Intelligent Endpoint™

The mine was already relying on 3D-P's Intelligent Endpoints to enable on-machine communications. The Intelligent Endpoint is much more than a ruggedized radio and boasts a powerful open-computing platform which enables the development of custom applications.

This allowed 3D-P to develop a correction publishing service which maintains a peers list of earth-moving equipment. 3D-P also developed an on-board application which automatically subscribes each machine to the publishing service.

In this way, GPS corrections could be unicast to individual machines rather than broadcast. This provided a much more reliable delivery of corrections while reducing overall network traffic. Network bandwidth was further improved by intelligently maintaining the peers list and timing out any equipment that was offline. This ensured only active equipment was receiving corrections and eliminated unnecessary ARP requests.

Ongoing Return On Investment

By investing in the Intelligent Endpoint, the mining operator was able to avoid new expenditure on network infrastructure while improving reliability of GPS correction delivery and preventing unnecessary downtime.

