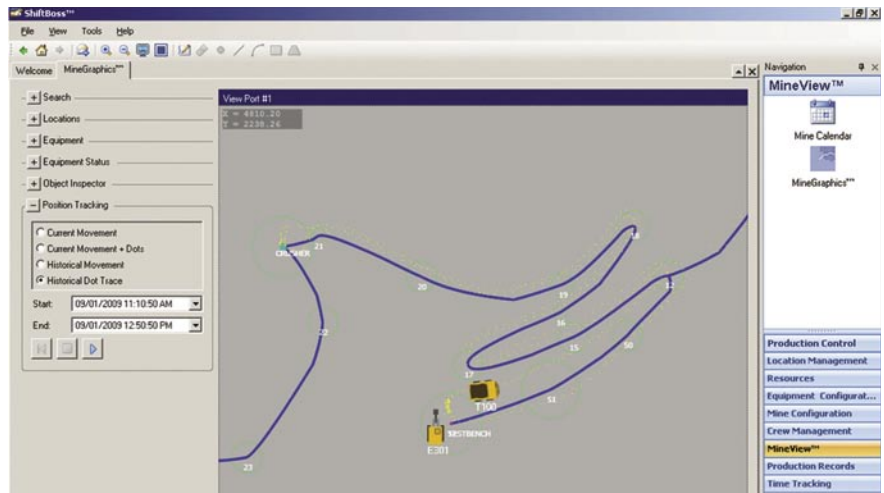# Making the fleet management decision easy

By Stephane Cantin, Modular Mining Systems, Canada

Mines and Quarries are often perceived as archaic when it comes to technology. On the average, a mine has less technology than the typical processing plant; but if one looks at the long history of technology in mining and the vast array of current products and vendors, an entirely different picture is cast. Take for instance general mine planning packages: they are now capable of doing everything from geology mapping to mine planning and survey. One might think that CAD packages would be extinct at most mines, yet the inclusion of additional, advanced features have kept them alive and well in every sector. ERP systems are becoming more functional as well.

Hence, every mining operation needs some form of fleet management, and the choice is enormous. But in each of these choices there is a common goal: to provide operators with the newest, most advanced, feature-rich system available on the market. This end is so strongly desired that it leads fleet management vendors to compete fiercely. Modular Mining Systems, Inc, as a pioneer in the fleet management space, has had to continuously evolve over decades of technology innovation, culminating in a complete system redesign with the Dispatch NextGen system. This release will usher in a new era of hardware and software technologies, providing many new features that meet the demands of the largest and most advanced mines in the world.

Continuous advancement is perfect for large-fleet customers who incrementally add to their core systems over several years or decades. But a quick examination of the industry shows that it is not only one type of customer that experiences the "big system" phenomenon. Now the feature race is so strong that it has pushed customers to demand and vendors to provide, in one way or another, all the features expected by the market: a long laundry list accumulated over several decades. Long adoption times and low utilisation rates consequently plague all brands of fleet management systems. Thus, it is for the long term consumer or

experienced user that the current fleet management market is built: complex, layered systems that take significant time to build, deploy, and embed into the operation's culture.

With mathematical optimisation formulas, predictive maintenance, space-age wireless communication systems, ground-based satellites, and a plethora of "must have" add-on products, even the most professional procurement teams with seasoned commercial and technical resources are left in a tailspin.

So how does a mine decide what features they really need? What happened to the less convoluted days of "one problem, one solution?"

In today's mining market, it has become almost standard for large mines or companies to appoint consultants to adjudicate the system selection process.

Prices fluctuate. The need for technology to meet the durability demands of a mine need to be factored in.

Where do the complications end?
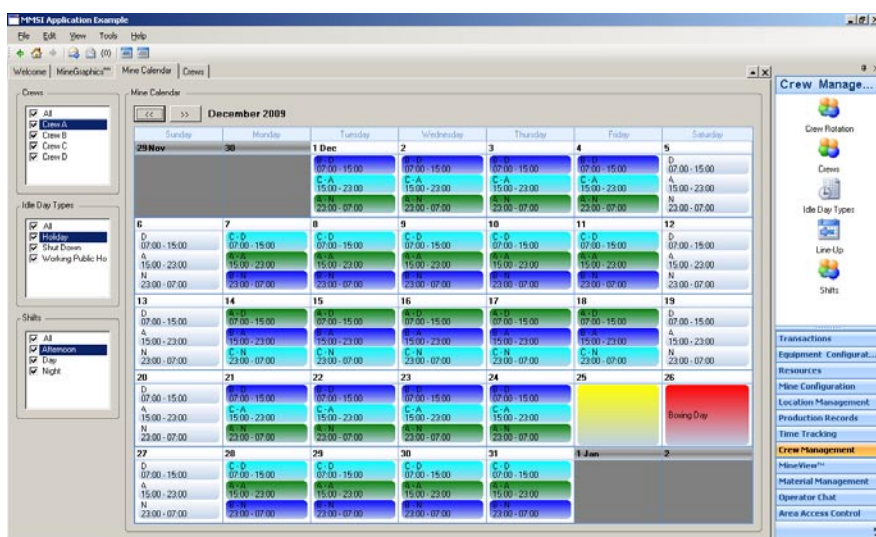
Does every mine really need every feature?

After 30 years of experience and over 180 system installations, Modular built the ShiftBoss mine production tracking system with simplicity, practicality, and affordability in mind. The staple features of the world's leading fleet management solution, Dispatch, have been condensed into a simple, low-cost hardware and software product. The difference between high-end fleet management and a solution like the ShiftBoss system is simple: pro-active features are not required for basic production tracking. While an optimised dispatching system tells you what you should do before an issue occurs, a production tracking system records and reports what occurred, leaving operations management to take actions that prevent recurrence. While proactive features are very valuable (especially for larger fleets), the total cost of ownership goes down significantly once they are excluded.

The ShiftBoss system is specifically for 'compact' operations that need to introduce some transparency in their operation and that want to look at production optimisation later. The most obvious advantage of a "passive" production tracking system is that it removes the need for a control room operator. This is critical given that the labour cost of operating a control room for one year can be the same (in most Western countries) as the capital value of the management system itself.

By removing the proactive features, it is possible to both lower system complexity and lessen the human resource requirements to operate and optimise it.

The result should be a state-of-the-art production tracking system that offers mines a wealth of production data with significantly reduced cost of ownership. By also using an effective low-cost mobile platform and a reduced number of features, smaller mines and quarries can obtain a reliable, productive system for 30-50% of the cost of fully scaled fleet management system, depending on fleet size and network infrastructure. The features of passive production tracking, like in the ShiftBoss system, hence allow for easier, more cost-effective, and less frequent hardware maintenance.

But all mines want more features than just load counting. Situational awareness is fundamental to the safe and effective running of all mines. Features like a moving map, hazard alerts, and presenting the operators with context-sensitive production data are crucial to safe production. A fully automated production cycle should also complement all of the expected truck and shovel operator features of large-scale systems, while still being configurable for site-specific production cycles. Each mine is different, and small operations

don't have the manpower to make up the difference that high-end systems demand. Material and crew management features that allow mines to track the ore mined (e.g. by volume, material type, and grade) and organise workers by crew and shift are a necessity. Couple this with office visualisation tools and an intuitive user interface, and you have what the industry needs for a basic production tracking system.

For mines and quarries that never thought of themselves as a "right fit" for full-scale fleet management,

passive production tracking is well worth investigating, especially as it becomes more commonplace in the industry. The relatively low price, ease of installation and integration, and simple, accurate tracking are ideal for mines with smaller fleets and fewer needs. The focus of systems like ShiftBoss is simple: to automatically deliver operational performance data to the people that can take corrective action. That in itself can be all the technology a smaller operation needs to gain the competitive edge. ◼