



With a focus on planned tyre work and interoperability, **TOMS** powers uptime, tyre performance and safety

Kal Tire's tyre maintenance planning system was designed to help customers enhance fleet productivity and safety with the visibility and automation needed to support proactive mining tyre management. Now, as mining increasingly automates and the need for informed decision-making grows, Kal Tire has integrated TOMS with thermal imaging technology to bring customers autonomous tyre inspections.

Four years after launching TOMS—Kal Tire's proprietary Tire Operations Management System, now in use on more than 130 mine sites across five continents—one of the biggest benefits is clear:

“What customers say, over and over, is the chance to have a hauler down for one planned and scheduled event rather than on two separate occasions, can mean thousands of dollars saved in terms of productivity,” says Mark Goode, director, business insights, Kal Tire's Mining Tire Group.

“The proactive management of mining tyres—allowing teams to plan and schedule tyre work along with other planned maintenance—has always been what's driven and differentiated TOMS,” says Goode.

Early on, without existing software that effectively enabled tyre service to be managed as a maintenance activity, Kal Tire found the most effective solution was to take an Enterprise Asset Management system (EAM) and develop it to be able to track and report on tyre performance.

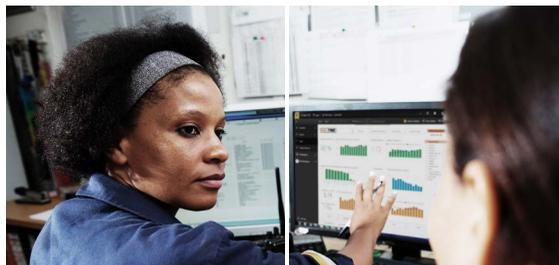
Today, built on a foundation of industry-leading technology, TOMS automates priority-based work orders to help plan preventative tyre maintenance—leading to opportunities to improve mean time between service (MTBS) and improve safety with equipment-specific safe work procedures embedded into work orders.

TOMS also features market-leading near real-time standardised service

delivery reporting, available to Kal Tire and customer teams 24/7 via Microsoft Power BI; and it integrates seamlessly with third-party systems, including ERP systems, mine dispatch, TPMS, and Pitcrew.ai, a provider of thermal imaging technology.

Together, TOMS' core features and interoperability allow the platform to deliver its most impactful benefits: a focus on planned tyre work, productivity and operational safety.

“TOMS is a maintenance planning system at heart,” says Goode. “It allows tyre work to be integrated into your maintenance plan and it also supports collaborative, informed decision making because it integrates so well with third-party systems,” says Goode. “That really empowers team leaders to spend more time providing leadership than recapturing data that already exist in other systems.”



“TOMS is designed to follow through on the agreed tyre and wheel strategy in clear, accessible and measurable ways—and it all starts with our belief that the best time to identify required tyre work is while equipment is operational. This enables effective work scheduling and maximises fleet availability,” says Goode.

Another TOMS capability that is proving its value is the ability for Kal Tire teams to report on and make decisions about tyre performance using the same measures used to track truck productivity.

“These insights allow us to make recommendations about the best tyre for the application based on a clearer understanding of actual and changing operational conditions and how that is impacting tyre performance. Now we have continuous learning and business intelligence that feeds back into and informs the next round of goals and benchmarks.”

TOMS and autonomous tyre inspections

For years, mine sites have benefited from tyre pressure monitoring systems (TPMS), which give a strong picture of what's happening *inside* a tyre, but Kal Tire also wanted to be able to understand what's happening *outside* the tyre, and automate steps to take action.

In 2021, after integrating the thermal imaging software of Pitcrew.ai with TOMS, Kal Tire began to bring customers its first automated tyre inspection stations to sites in Australia, Canada, Chile and soon to Mozambique.

“As mining trucks pass by, the stations monitor front and rear tyres, and the AI software searches thermal imaging video footage for anomalies such as hot spots, belt edge and tread separations,” says Christian Erdelyi, manager, mining technology solutions, Kal Tire's Mining Tire Group. “These could all have a serious impact on safety, productivity and downtime.”

While Pitcrew.ai thermal imaging and software captures the data, TOMS makes that data useful and automates critical next steps.

For example, a haul truck passes the inspection station, which captures and detects a hot tyre. That finding, and all findings, are reported into TOMS. The system then automates an inspection work order as part of a self-reinforcing feedback loop. Next, TOMS plans tyre change work as necessary based on damage severity.

“For us, the ability to identify tyre-related issues in real-time and react quickly to avoid serious tyre issues is critical,” says Erdelyi. In addition to reducing risks, the technology can reduce the reliance on frequent physical inspections, creating even more uptime for a site's prime movers and enabling teams to focus on condition-based inspections while data is collected autonomously.

Having more tyres on the road performing safely means sites can improve haul truck productivity, team efficiency and safety.

