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INTERMAT PRESS RELEASE

Goodyear launches digital innovations to reduce OTR costs

Data-based tyre management means significant savings
thanks to 85% fewer tyre-related incidents

Paris, April 23, 2018 – Responding to the digital transformation in the Off-the-Road (OTR) vehicle and equipment industry, today Goodyear is introducing two new digital innovations to help OTR fleets reduce their total cost of ownership.

Goodyear Proactive Solutions TPMS (Tyre Pressure Monitoring System) Heavy Duty is a data-based solution enabling precise, real-time monitoring of tyres that, in combination with Goodyear premium tyres and services, will help OTR fleets optimize tyre performance, reduce downtime and improve total cost of ownership. Goodyear TPMS Heavy Duty prevents tyre-related incidents; resulting in reduced machine down time, less breakdown costs and up to 15% more working hours due to tyres having the right pressure at all times. This means up to 85% fewer tyre-related incidents¹.

Goodyear is also launching an enhanced version of its EMTrack OTR tyre performance monitoring system. The significantly enhanced EMTrack system enables faster, even more accurate collection of critical tyre data like tread depth, inflation levels and other indicators, helping optimize tyre service life, as well as assisting with OTR tyre forecasting and budgeting.

Goodyear Proactive Solutions TPMS Heavy Duty offers great potential economic benefits. As an example, for a wheel loader, annual savings of between 3,000€ and 4,000€ are possible. This is thanks to no longer having to carry out external tyre inflation checks, increased tyre life of between 10% and 15% and the elimination of tyre failures which typically happen once per year¹.

“Recent advances in connectivity give us the ability to help our customers optimize their tyres usage and cut their costs. OTR machines operate in some of the most hostile environments and tyres are an essential part of them. Goodyear Proactive Solutions TPMS Heavy Duty, for

¹ Benefits verified through a real-condition test conducted by Goodyear since June 2016. Benefits can be achieved by consistently following up on pressure and temperature alerts and reports. Actual results may vary depending on utilization conditions of the tyres, how often the tyres are replaced, driving conditions and proper tyre maintenance. Find out more at proactive.goodyear.com.



example, can help prevent tyre inflation loss which is very common. A tyre that is 50% under-inflated can reduce tyre life by 72%," said David Anckaert, Vice President Goodyear Commercial Tyres Europe. *"Goodyear Proactive Solutions TPMS Heavy Duty provides real-time temperature and pressure monitoring. This information is then used by the Goodyear predictive algorithms to predict tyre life. This new solution means peace of mind for our OTR customers and helps ensure a much greater return on investment from tyres."*

Goodyear Proactive Solutions

Following the launch of Goodyear Proactive Solutions for truck fleets in 2016, Goodyear is extending its digital operations management system to Off-the-Road vehicles.

From racing and airplanes to lunar vehicles, in a history spanning 120 years, Goodyear has consistently enabled new forms of emerging mobility. Goodyear Proactive Solutions fits perfectly in this tradition of innovation.

Goodyear Proactive Solutions TPMS Heavy Duty features advanced telematics and patented predictive analytics technology, able to monitor tyre pressure and temperature and to notify operators on potential issues before they happen. This enables immediate action to be taken to avoid damage and downtime. Tyre Pressure Monitoring System (TPMS) sensors mounted inside the tyres constantly monitor tyre pressure and temperature, and transmit this information via on-board telematics to a Goodyear server. Here the data is analyzed and operators notified of potential issues before they happen. The data is further provided to predict tyre life and plan maintenance.

Estimated savings of over 71,000€ illustrate the benefits of a five-year Goodyear Proactive Solutions TPMS Heavy Duty contract covering four wheel loaders operated by Dutch company ESD-SIC. The savings comprise; 1,100€/year from eliminating bi-monthly inflation checks, 9,700€/year by eliminating tyre failures (historically one failure per year) and 17,600€ thanks to increased tyre life of between 10% and 15%².

A further benefit of Goodyear Proactive Solutions TPMS Heavy Duty is Track & Trace. This is a built-in GPS function allowing fleet managers to locate machines as well as to prevent unauthorized movement or theft.

Maintaining correct tyre inflation is essential to ensure optimal vehicle performance. Incorrect tyre pressure shortens tyre life, causes failures, affects the stability of machines and wastes fuel.

² See footnote number 1



The sooner a potential issue is identified, the less risk there is of an expensive unplanned intervention or breakdown, avoiding unnecessary down-time and expensive long-term damage.

The benefits of Goodyear Proactive Solutions are increased tyre operating hours, better tyre durability, maintained optimal performance levels and reduced tyre maintenance costs, in addition to better retreadability. This is thanks to targeted maintenance reports that are generated allowing maintenance to be carried out only on those tyres that really need it – saving time and cost.

Goodyear Proactive Solutions TPMS Heavy Duty has already been successfully deployed in various applications such as dump trucks, wheel loaders and mobile cranes.

Goodyear Proactive Solutions is now available in Austria, Belgium, France, Germany, Italy, Luxembourg, Netherlands, Poland, Portugal, Spain, Switzerland, and the United Kingdom.

Goodyear EMTrack

To enrich its value proposition to OTR fleets, including construction operations, Goodyear is also introducing the latest enhanced version of its EMTrack OTR tyre performance monitoring system. This newly enhanced OTR tyre management tool enables faster, even more accurate collection of critical tyre data like tread depth, inflation levels and other indicators, helping optimize tyre service life, as well as assisting forecasting and budgeting.

EMTrack is available for construction, mining, quarry and port operations, worldwide.

HOW THEY WORK

Goodyear Proactive Solutions TPMS Heavy Duty - How it works

TPMS sensors, which measure both tyre pressure and temperature, are fitted to each tyre. Signals from each of these sensors are received by an on-board router, which continuously sends this information to the Goodyear server via the mobile network. This data is then analyzed using Goodyear algorithms featuring G-Predict technology developed by a team of Goodyear experts. The server sends daily reports by email to the fleet manager.

In the event of a potential issue, alerts are sent from the server to the fleet manager via email and/or by an app in real time using a graphic showing which tyre is affected and how serious the problem is.

Goodyear Proactive Solutions TPMS sensors can be transferred to other tyres if replacements are fitted.

The on-board router in the system has a built-in GPS Track & Trace function. This function can identify a machine so it can be pin-pointed on a site or located if stolen.



Later this year Goodyear will launch an additional app for drivers, so that they will also be informed of any issue in real time.

Goodyear EMTrack - How it works

The newly enhanced EMTrack OTR tyre performance monitoring system includes a new, hand-held scanning tool that enables Goodyear tyre technicians to measure inflation and tread depth faster and more accurately. Captured data automatically uploads securely via Bluetooth to a password-protected cloud for secure data storage. Using the new Goodyear EMTrack App, end users can download easy-to-read, customizable, real-time reports that show tyre performance. Tyres can be tracked if currently in service, in inventory or have been removed from service. EMTrack also can help predict tyre longevity in terms of hours, cost and wear, which helps enable more accurate forecasting and budgeting.

Goodyear OTR Tyres

Goodyear produces a very comprehensive range of Off-the-Road tyres covering all applications in construction, mining, underground mining and quarrying as well as for port handling equipment and other industrial uses. These tyres are supported by a network of fully trained professional service providers offering a wide range of innovative services and management tools.

INTERMAT

The new innovations are being launched at Intermat 2018, which is being held at the Paris Nord Villepinte Exhibition Center from April 23 to 28, 2018. On the Goodyear stand 5A F 045 displays will highlight the news using hi-tech electronic screens featuring virtual reality and holograms. As well as highlighting Proactive Solutions TPMS Heavy Duty and EMTrack IV, three of Goodyear's wide range of OTR tyres will be featured.

The tyres featured include the TL-4A and RM-4B+. The TL-4A tyre in size 33.25R29 was developed specifically for the new Volvo A60H 60-ton class articulated dump truck, which meets the growing demand for higher capacity vehicles. The RM-4B+ OTR tyre range is for rigid dump trucks operating in severe conditions, offering a high level of wear performance and improved treadwear.

Goodyear is one of the world's largest tyre companies. It employs about 64,000 people and manufactures its products in 48 facilities in 22 countries around the world. Its two Innovation Centers in Akron, Ohio and Colmar-Berg, Luxembourg strive to develop state-of-the-art products and services that set the technology and performance standard for the industry.



For more information about Goodyear and its products, go to www.goodyear.com/corporate.