

---

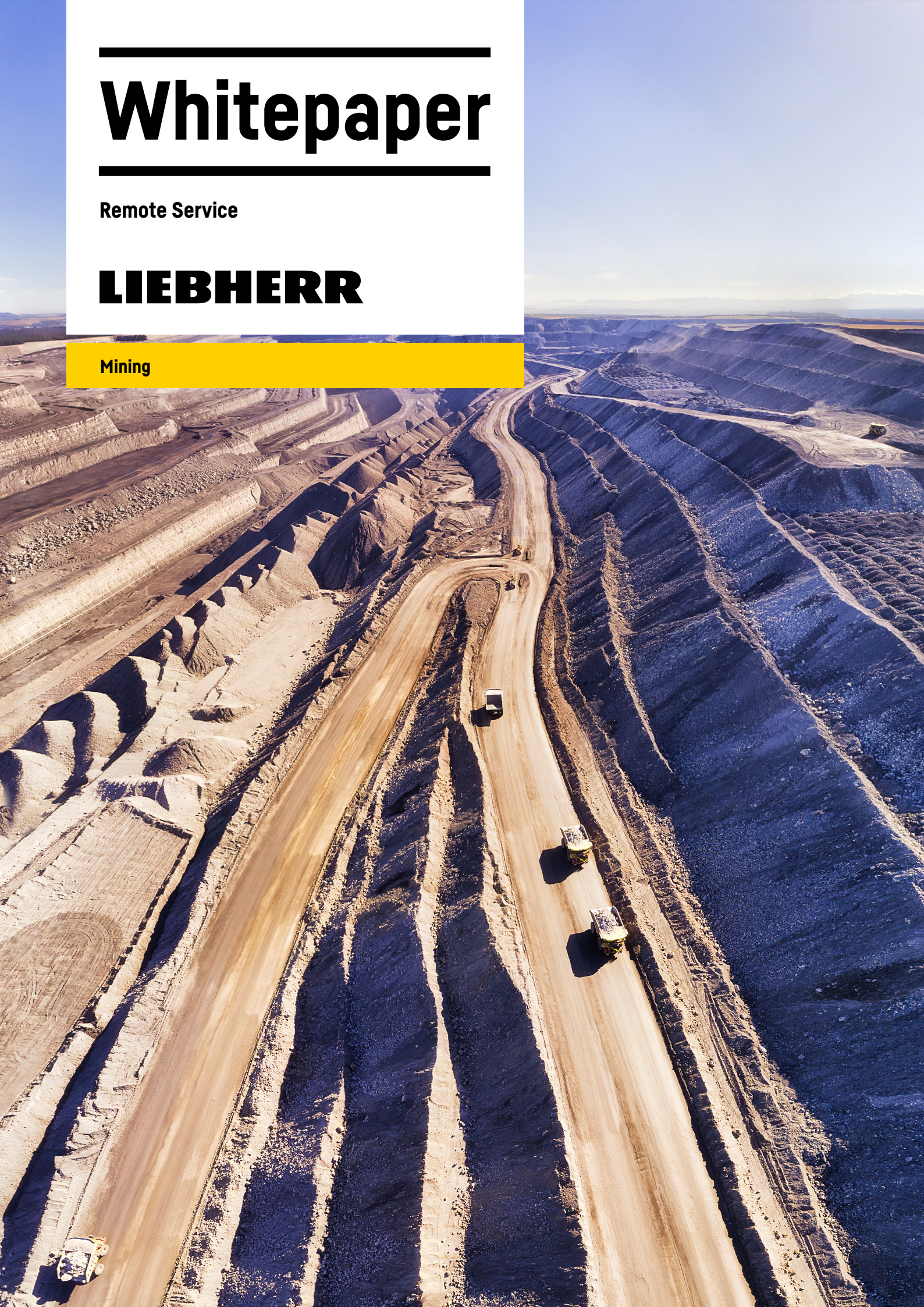
# Whitepaper

---

Remote Service

**LIEBHERR**

Mining





# The service revolution: how Remote Service is reshaping your industry

---

**From telehealth to construction, remote service has had a transformative effect in industries where it has been deployed to date. Its potential in mining maintenance should not be overlooked.**

Spurred on by the COVID-19 pandemic, there is little doubt that the migration of physical operations into the digital world has been one of the 21<sup>st</sup> century's defining trends. Technological advancement has made remote collaboration more feasible than ever. Cross-industry success of remote support methods is well-documented.

In healthcare, it has enabled telemedicine and remote monitoring, enhancing patient care and accessibility. In the earthmoving sector, remote diagnostics and maintenance have minimised machine downtime and operational interruptions. The maritime crane industry has benefitted from remote monitoring systems that make maintenance and repairs timelier and more efficient than ever, boosting productivity and safety.

Mining stands to gain significantly from adopting remote service solutions. Challenges such as travel times to mine sites, distance, and availability of expert skills, in addition to safety management, can be resolved in mining operations via introduction of remote service and omnichannel customer solutions. Remote service solutions offer several unique advantages; these include enhanced problem-solving and diagnostic capabilities, quicker resolution times, cost savings and improved safety conditions. A growing range of these solutions, providing customised support through advanced technologies, are hitting the market. Centralised monitoring systems enable real-time oversight of multiple mining sites, improving operational coordination and responsiveness. Real-time remote-control systems enhance safety and efficiency by allowing operators to centrally manage equipment and processes, particularly in hazardous and hard-to-reach areas. Additionally, the use of drones and remote sensors for site inspection and data collection offers valuable insights for surveying, mapping and monitoring environmental conditions, further enhancing mining operators' ability to make the right decisions quickly and consistently.

This report dives into the data underscoring the value of adopting remote support. The concrete evidence from a broad range of sectors on the benefits of remote service operations is clear; it is to this topic that the next section turns. By picking the right partner, mining operators of all sizes can realise the economic and operational benefits of adopting a remote service solution.

**Real-time remote-control systems enhance safety and efficiency by allowing operators to centrally manage equipment and processes, particularly in hazardous and hard-to-reach areas.**





# Why remote service?

Where it is being used already, the beneficial outcomes from remote service and parallel technologies in other industries are dramatic. Frequently the effect has been transformative, and the potential of remote service is still being realised.

In clinical settings, a wide body of research has reached positive conclusions about the advantages of telehealth. An observational study compared the clinical outcomes of new patients referred to orthopaedic virtual clinics between January and February 2021 with those of new patients referred to face-to-face clinics January and February 2020. Both cohorts were from the same Hospital Trust within the UK's National Health Service. The study revealed that virtual clinics reviewed more patients than traditional face-to-face clinics (821 in the former case versus 499 in the latter). Additionally, follow-up with patients was significantly easier; 78.3% of patients reviewed via a virtual clinic appointment were booked for future face-to-face or virtual review.<sup>1</sup> Clinical efficiency has been turbocharged and waiting times for patients have crashed.

In the industrial maintenance sector, rapid advancements in troubleshooting capabilities have resulted from implementing remote servicing. A study by Panasonic Heating & Cooling Solutions Europe assessed the results of ramping up remote service operations at the height of the Covid-19 pandemic. They reported cases where heating problems were resolved in as little as 16 minutes using remote servicing - compared to the usual pre-pandemic one day wait for an engineer to become available and travel to the site.<sup>2</sup> It highlights how remote service can drastically reduce the time required to identify and solve problems, enhancing customer satisfaction and operational efficiency.

With all this data in mind, it is little wonder the adoption of remote services has seen significant growth across a wide range of industries. A survey conducted by PMMI, an organisation representing packaging manufacturers across North America, revealed that 54.1% of end-users have increased investment in remote services and monitoring between 2021 and 2024.<sup>3</sup> As remote servicing continues to gain market momentum, it will transform how industries operate and maintain continuity under challenging circumstances.

Now remote operations are becoming increasingly prevalent in the mining industry. One example is Rio Tinto's AutoHaul. A fully autonomous, long-distance, heavy haul rail network, it is exclusively remotely monitored - ensuring safe and efficient haulage. The use of drones for remote surveying and inspection, as seen in South32's partnership with CSIRO, further illustrates the innovative applications of remote service in mining.<sup>4</sup> These are just some of the recent advancements pointing to the enhancements for operational efficiency and site accessibility made possible by remote technologies.

**As remote servicing continues to gain market momentum, it will transform how industries operate and maintain continuity under challenging circumstances.**



# Liebherr's solution

It is evident that remote service solutions offer substantial benefits across the business world. The health sector was a notable early adopter of remote services like telehealth and telemedicine, but a range of industries are catching up. Liebherr's Remote Service offering exemplifies how these advantages can be harnessed to optimise the operational efficiency of their range of machinery. Their service utilises a range of digital tools and applications to ensure real-time support is always within reach for Liebherr machines – keeping performance and reliability significantly ahead of the curve for their owners.

The first step of the Remote Service user journey is to empower technicians and users to identify root causes of issues with equipment. For this, they use the Troubleshoot Advisor to diagnose the issue using troubleshooting guides and direct links to support articles. The Content Delivery Portal application assists the user, offering access to essential maintenance and technical documentation such as service manuals and system schematics supporting the troubleshooting process and resolving it from their end if possible. If not, the next stage is for the technician or user to seamlessly connect with a Liebherr specialist

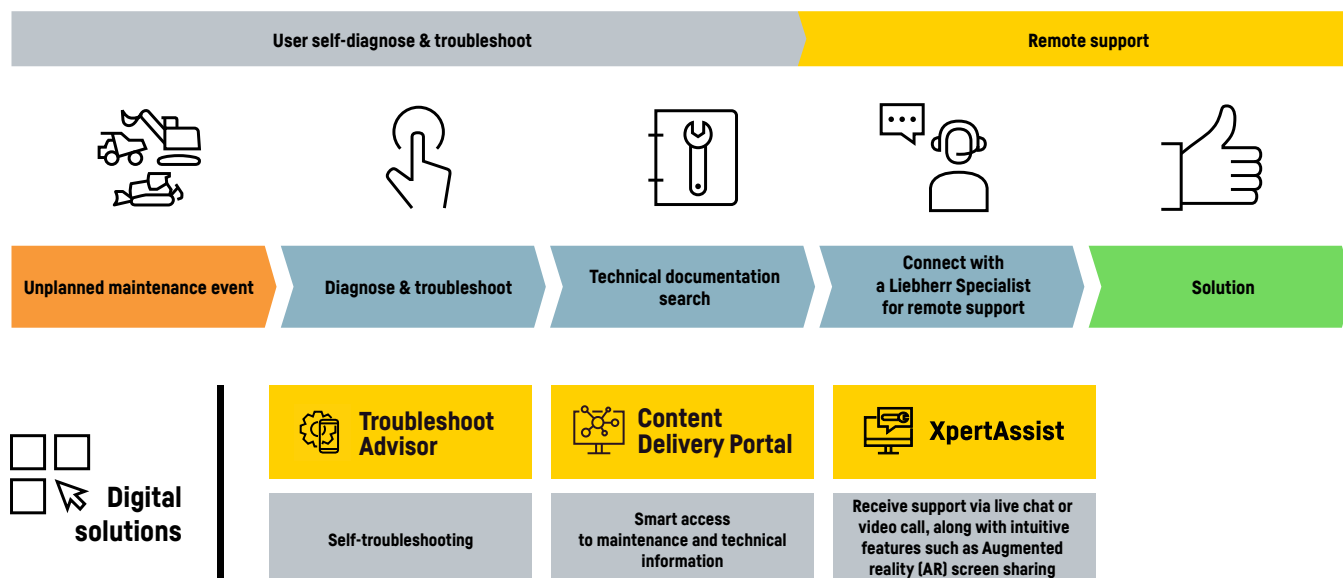
through the XpertAssist application, enabling efficient communication between the user and the Liebherr specialist. The platform enables the real-time connection between users and Liebherr specialists through visual assistance, designed to enhance collaboration and offer much more than just video communication.

This is achieved via features including multi-user audio-video calls with an enhanced live chat feature, complete with a built-in translator and the ability for users to join video calls directly from their smartphones or tablets. For an efficient communication process, other features such as augmented reality (AR) capabilities – for example to annotate and highlight parts functions in the XpertAssist application - enhance the whole experience and allow for more precise and safe guidance, thus resulting in an improved first-time fix rate. Team sharing is also improved, with the ability to share your smartphone or tablet screen with other participants, and present case reports and related documentation easily. Through this system, real-time remote assistance is always available, drawing on a digital toolbox comprising video calls, chat, and AR features to help resolve challenges promptly and effectively.



Remote Service

## User journey







Having introduced similar Remote Service solutions for their maritime crane divisions, Liebherr has been able to deliver substantial value to customers - with mean time to repair reduced by up to 50% and field service costs cut by up to 20% per annum<sup>5</sup> and 30% fewer onsite calls. Liebherr's maritime crane division was also able to keep on-site service attendances to a minimum, as most of the identified issues were resolvable via the Remote Service digital solution.

With the solution's success established across Liebherr's network, and Remote Service's proven record in other industries, Liebherr is introducing Remote Service to mining - attaining and delivering an efficient digital solution to their mining customers. Its aim is to help and empower on-site technicians by resolving issues far faster than conventional methods.

This comprehensive package fortifies mining companies' maintenance support networks while delivering unparalleled operational efficiency, significant cost savings and enhanced safety. Embrace Remote Service to experience a new standard in mining machine maintenance, driving success through cutting-edge technology and expert collaboration with original equipment manufacturers.

Scan the QR code to request a demo and discover how Remote Support can put unprecedented maintenance power at your fingertips.



**Liebherr maritime crane division has been able to deliver substantial value to customers - with mean time to repair reduced by up to 50% and field service costs cut by up to 20% per annum.**



# Appendix

## Bibliography

<sup>1</sup> **Shammout S, Wall R, Murphy PN, Jain K.** Virtual clinics versus face-to-face review: Is the benefit the same for new orthopaedic patients?

July 2022, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9122882/>

<sup>2</sup> **Sarah Nicastro, IFS.** Future of Field Service: What's your Remote Service Strategy?

July 2022

<https://www.ifs.com/assets/service-management/future-of-field-service-remote-service-whitepaper>

<sup>3</sup> **PMMI Business Intelligence,** Trends in Remote Services & Monitoring, January 2024.

[https://www.webbersmith.com/wp-content/uploads/2024/01/2024-Trends-in-Remote-Services-and-Monitoring\\_FINAL.pdf](https://www.webbersmith.com/wp-content/uploads/2024/01/2024-Trends-in-Remote-Services-and-Monitoring_FINAL.pdf)

<sup>4</sup> **Minerals Council of Australia,** The Digital Mine,

[https://minerals.org.au/wp-content/uploads/2022/12/The-Digital-Mine\\_2022.pdf](https://minerals.org.au/wp-content/uploads/2022/12/The-Digital-Mine_2022.pdf)

<sup>5</sup> **Liebherr press release,** XpertAssist – real-time remote support, 25

August 2021.

<https://www.liebherr.com/en/aus/latest-news/news-press-releases/detail/xpertassist---real-time-remote-support.html>

