



CAPTURING DATA. DELIVERING RESULTS.

VIMS™ SYSTEM

YOUR CAT® EQUIPMENT HAS SOMETHING TO TELL YOU.





ARE YOU LISTENING?

The electronic sensors and control systems on your Cat® equipment generate huge volumes of information that can help you:

- Monitor machine health and condition
- Track equipment hours and usage
- Optimize work flows and production cycles
- Maximize equipment uptime
- Reduce cost-per-ton

With all this data available, your Cat equipment can tell you a lot about its own performance and health.

Increase Availability And More

Mine sites rely on the VIMS™ System to help maintain high availability levels and manage many other facets of their operations. The VIMS System offers powerful tools for payload management, road condition assessment, production running totals, mine planning, and component monitoring, enhancing the entire business process.





THE CAT VIMS™ SYSTEM GIVES YOUR EQUIPMENT ITS OWN VOICE.

The VIMS System helps you manage your entire fleet by letting each machine provide you with up-to-the-minute information about its own health and the working conditions around it.

The key to letting you “listen” to your equipment is a combination of two integrated systems:

- The VIMS On-Board System—This hardware-based system captures machine data, delivers instant feedback to the operator and makes vital machine-generated data available for download.
- The VIMS Off-Board System—Primarily a software solution, this system helps you drill into the information, glean the relevant facts and make well-informed maintenance, operations and management decisions.

The VIMS System enables many other integrated Cat mining technologies, as well, making all your data even more powerful and valuable. Plus, Caterpillar and your Cat Dealer offer tools to help you manage and analyze your proprietary data, helping to deliver maximum value for your entire operation.

The VIMS System Watches

The VIMS System collects data from the sensors and Electronic Control Modules (ECMs) on the machine. This data can be stored for future download and analysis, or can optionally be sent wirelessly to a remote location.

The VIMS System Informs

Data is only valuable when it is turned into useful information. The VIMS System does that instantly by providing real-time feedback through an in-cab display that keeps operators informed about machine conditions and advises them to take appropriate actions. In some cases, it can automatically govern machine performance.

The VIMS System Remembers

The system stores a lot of information over a long period of time. It also provides detailed information about specific events—much like an airplane flight recorder—to help your team analyze problems as they occur and decide on the best course of action.

The VIMS System Analyzes

Once the data is downloaded or transmitted, the VIMS System offers several software tools that help you drill into and summarize the data. These tools give you a complete picture of your entire operation.

The VIMS System Enables

The VIMS system remembers what happened yesterday and can help forecast tomorrow. It helps your team identify potential problems, plan for maintenance procedures and schedule repairs before failure.

The VIMS System Delivers

It all adds up to more proactive equipment management—which translates into more machine availability, more production, lower costs and more life from your Cat equipment.

The VIMS Guardian System Extends

VIMS Guardian retrofit system provides machine health and performance data, but without an operator interface. It is available on certain track-type tractors, underground mining equipment and more.

Improve Speed and Accuracy

At an iron ore plant in Western Australia, operators loading the train wagons are faced with two critical challenges on a daily basis—speed and accuracy. The VIMS System enables them to track the tonnage of ore loaded and change traditional operating practices, allowing the train wagons to be loaded extremely close to the target weight.



CAPTURING DATA

Predict and Save

A large mine was changing air filters on its trucks every 500 hours. Then they began using VIMS Trends reports to monitor filter restrictions over time. These reports predicted that it would be safe to extend the change interval. Now the company replaces filters only when VIMS data shows that performance is declining. In this case, the VIMS System saved the company \$7,000 per truck per year.

The VIMS On-Board System

The VIMS On-Board System includes a central data recorder networked with the machine's ECMs and an array of sensors, plus downloading interfaces and a port for wireless transmissions. Recorded data can be downloaded in the shop or field, or transmitted wirelessly to the Off-Board System.

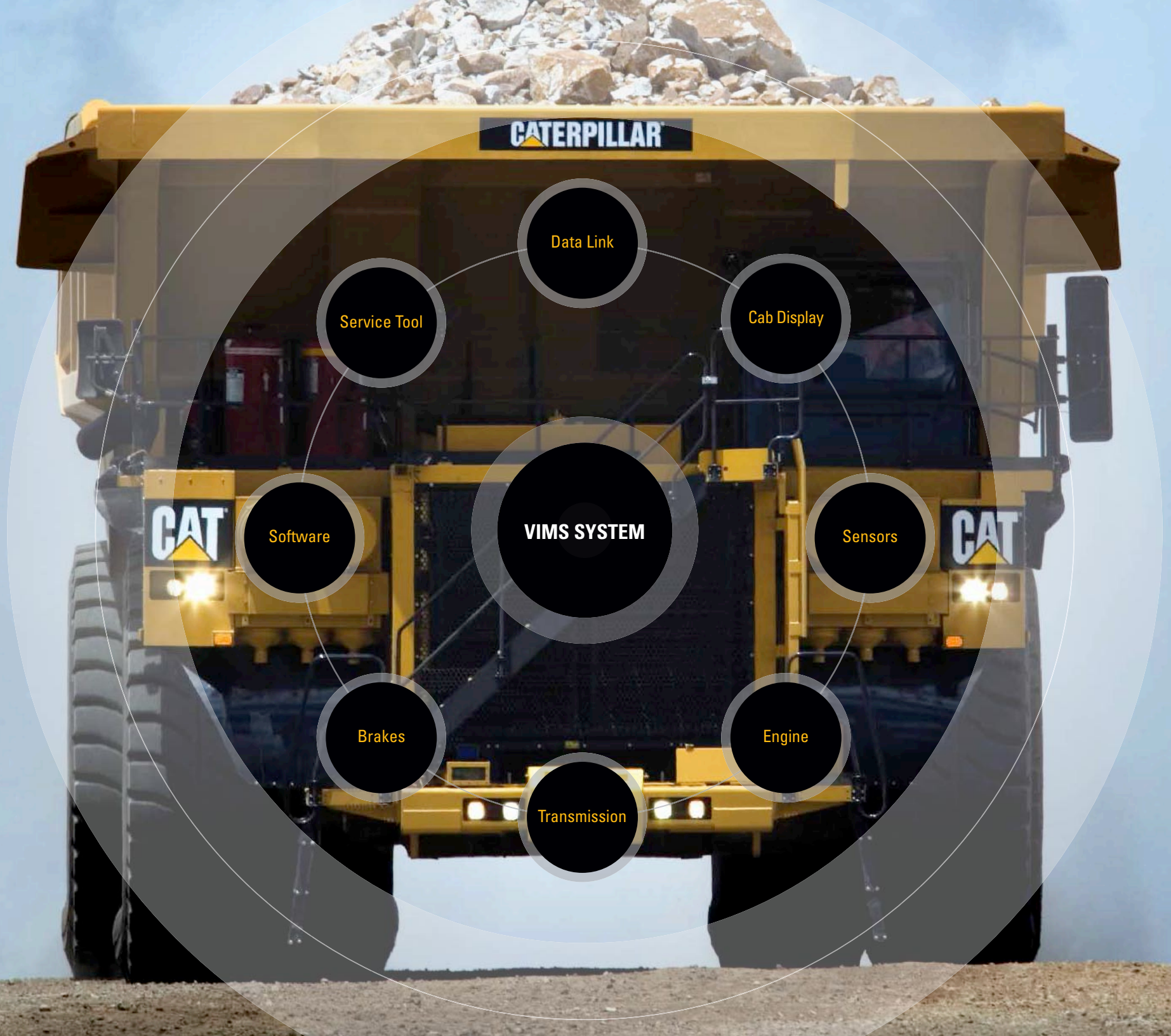
Full integration produces comprehensive results.

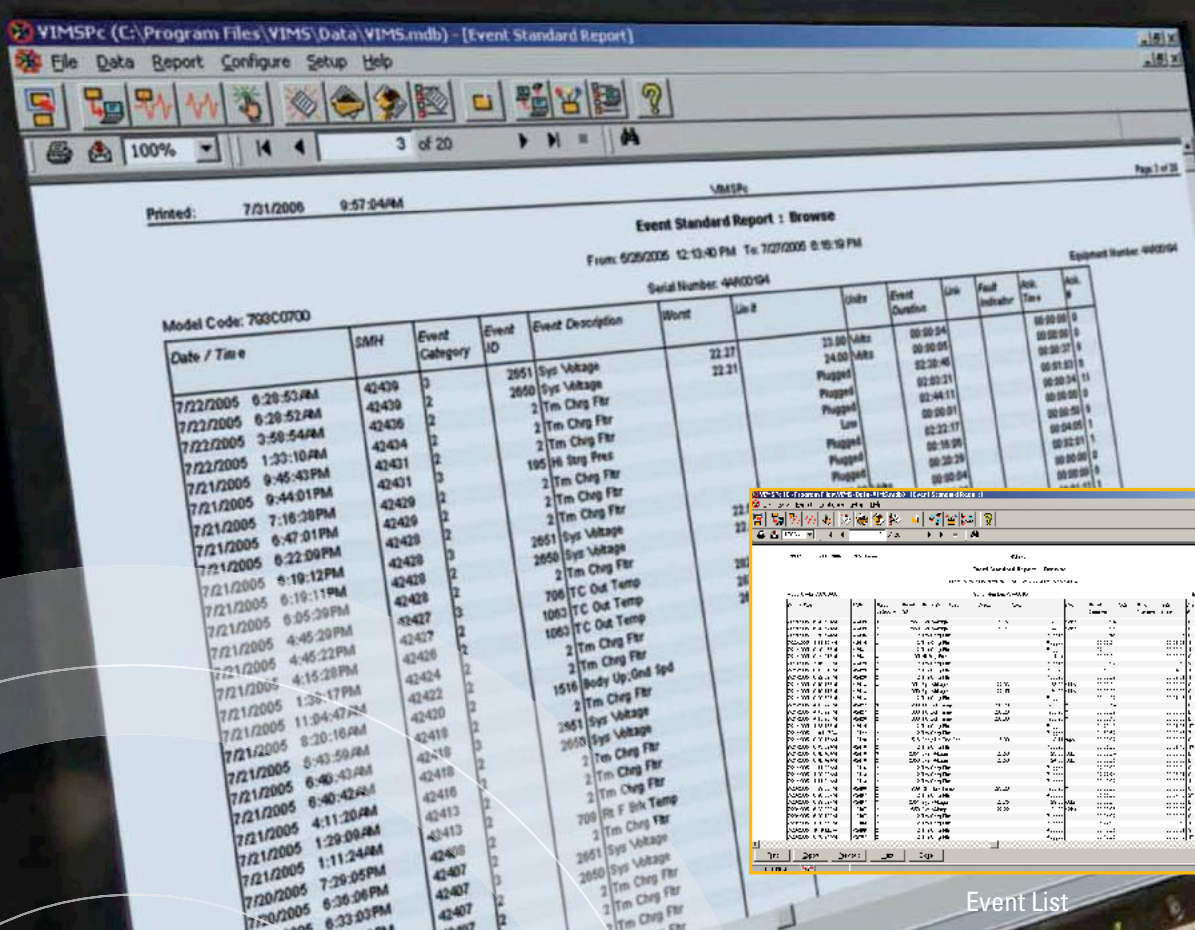
Unlike other monitoring systems—which may gather data from only a few components or systems—the VIMS On-Board System is fully integrated with all machine ECMs, power train components and critical machine operations. A keypad in the cab lets the operator acknowledge alerts and “talk back” to the system as required.

VIMS System Main Module - Acquires data from the ECMs and sensors, stores it away and compares it against preprogrammed specifications and limits. It generates in-depth, detailed data which enables the VIMS System to produce comprehensive results.

Downloading and Telemetry

The VIMS On-Board System includes ports for both wired downloading and wireless transmission. Downloading stored files to a laptop computer or other device can be done in the cab or from ground level. CAN and Broadcast ports allow for the use of an optional wireless telemetry system such as MineStar™ FleetCommander and Health. Optional interface units are available providing additional wireless radio options and user scheduled file transmissions.





Event List



Event Recorder

DELIVERING RESULTS

The VIMS Off-Board System

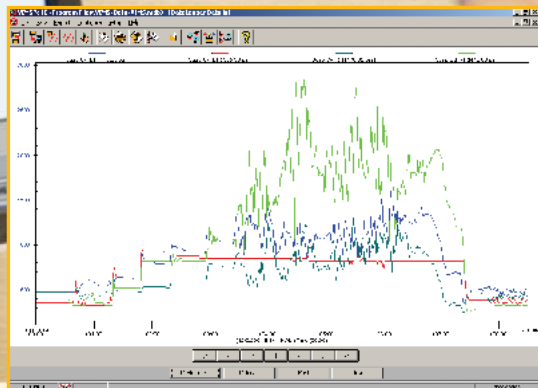
Available for all Cat machines equipped with the VIMS On-Board System, the VIMS Off-Board System is the software solution that ties everything together to deliver results for your operation.

VIMSpC is an optional, single-machine software solution available for all machines equipped with the VIMS System. VIMSpC also offers custom fleet production and maintenance reports. Its user-friendly architecture can filter and sort event, payload and trend data to create dynamic reports for operations improvements, fleet management and more.

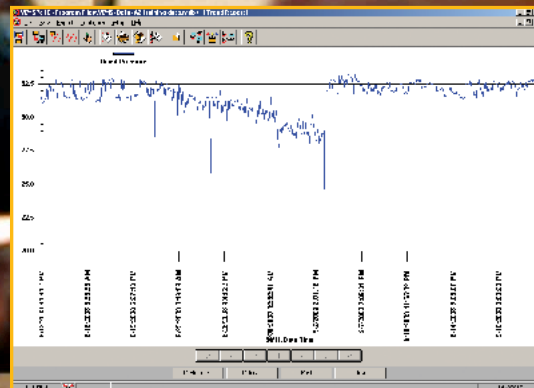
Analysis tools help turn data into decisions

The VIMS Off-Board System generates multiple types of reports from the on-board data.

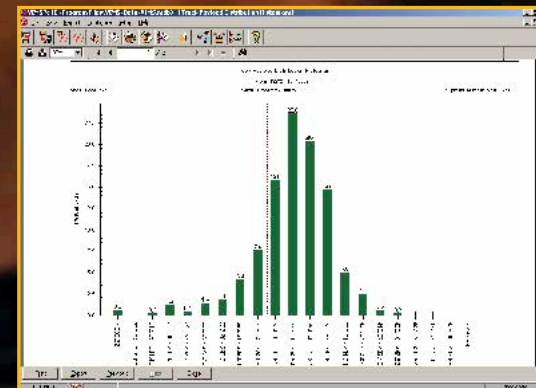
- **Event List** records, categorizes and time-stamps up to 500 system events that can occur during extended machine operation.
- **Event Recorder (Snapshot)** helps technicians troubleshoot a serious event by automatically capturing detailed data five minutes before and one minute after the event occurs.



Data Logger



Trends



Histogram

Additional Features Address Specific Issues

Along with its general data analysis tools, the VIMS Off-Board System includes a number of specialized features aimed at specific operational and management issues.

- **Data Logger** aides in troubleshooting by enabling the operator to trigger recording of real-time data that can show service personnel exactly what is happening when an unusual situation or event occurs.
- **Payload** helps enhance truck and loading tool effectiveness and improve total fleet production by collecting payload, cycle-time and haul-distance data. (Not available on VIMS Guardian)
- **Trends, Cumulatives & Histograms** provide summaries and time-based graphs of key data to aid in diagnostics, proactive maintenance and performance evaluation.

- **RAC (Road Analysis Control)** helps operators reduce road-related stresses on haul trucks, and helps your team focus haul-road maintenance operations where they are needed most.
- **Payload Scoreboard** provides the loading tool operator with a numerical display of the tonnage loaded or a "countdown-to-zero" readout.

- **MAX Payload Speed Manager** helps alleviate load-related haul-truck safety and maintenance issues by automatically limiting travel speeds when haul trucks are overloaded.
- **TKPH Monitor** provides haul-truck operators with a warning to reduce their speed if operational tire loads are exceeded, reducing costly tire damage from overheating.

VIMS 3G - UPGRADED FEATURES FOR SELECT CAT MACHINES

The third generation of the VIMS System—VIMS 3G—is now available for select Cat Mining equipment, offering enhanced convenience and functionality, along with updated communications capabilities.



Real-Time Browser

VIMS 3G allows users to view near-real-time machine data in an easy-to-access web browser. An intuitive browser interface provides information on up to ten machine parameters at a time including: coolant temperature, oil pressure, current gear selection, current payload and more. This new feature also enables you to trigger snapshots and data downloads instantly from a wirelessly-connected remote location.



Faster Downloads, Improved Connectivity

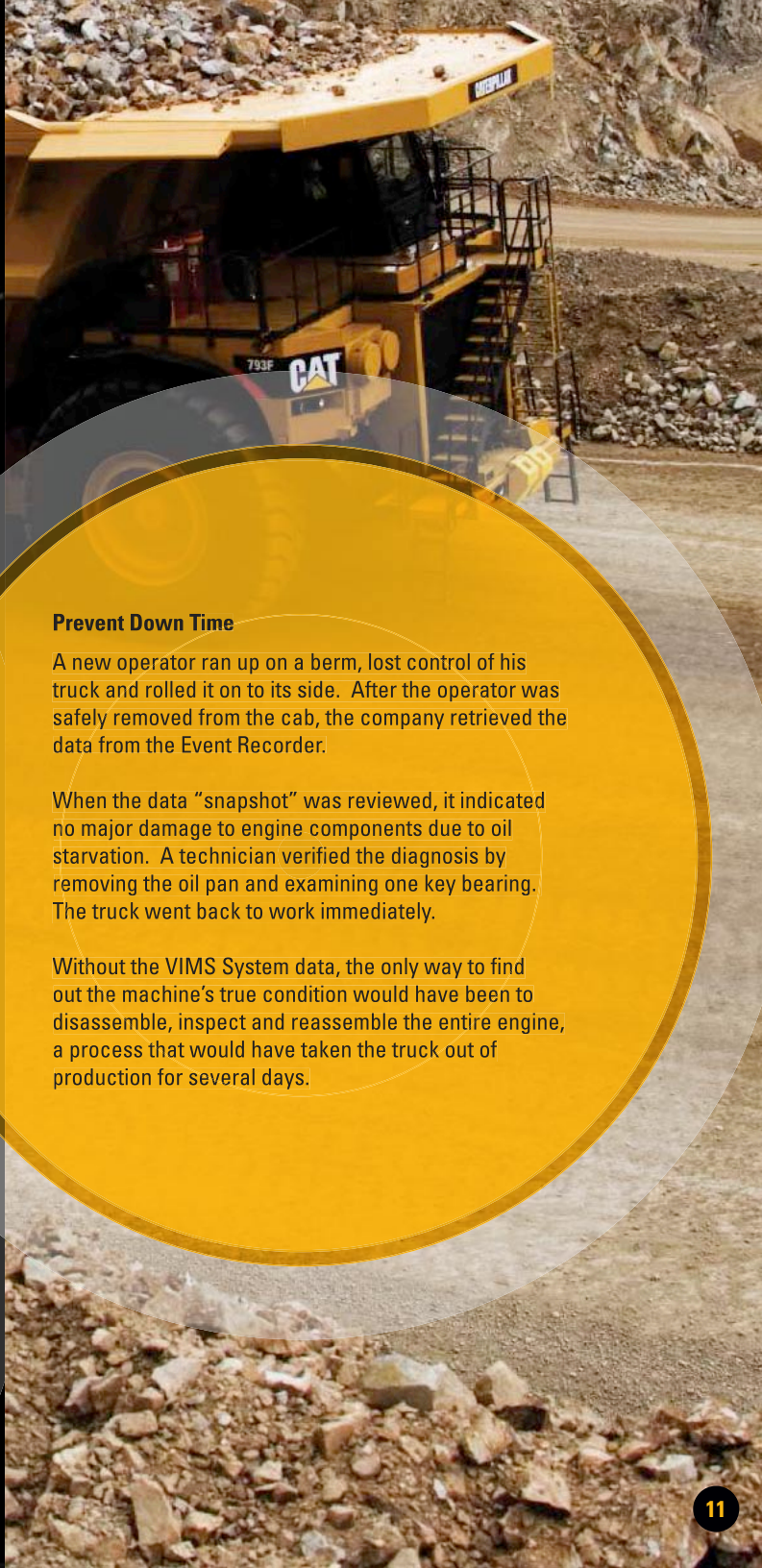
VIMS 3G boasts faster download speeds and has an embedded Ethernet controller enabling expanded broadband capability. VIMS 3G is compatible with the most widely-used radio and cellular broadband systems.

In addition, it allows direct connection to a laptop through an on-board Ethernet port, with or without using a separate communications hardware/software system.



Seamlessly Interfaces with Current VIMS Systems

All information generated by VIMS 3G, VIMS Guardian, and all prior VIMS systems are compatible with VIMSpc off-board software. VIMS 3G is now offered on key Cat mining machines. See your Cat Dealer for available models.



Prevent Down Time

A new operator ran up on a berm, lost control of his truck and rolled it on to its side. After the operator was safely removed from the cab, the company retrieved the data from the Event Recorder.

When the data "snapshot" was reviewed, it indicated no major damage to engine components due to oil starvation. A technician verified the diagnosis by removing the oil pan and examining one key bearing. The truck went back to work immediately.

Without the VIMS System data, the only way to find out the machine's true condition would have been to disassemble, inspect and reassemble the entire engine, a process that would have taken the truck out of production for several days.



SUPPORTING YOUR OPERATION

The Cat® VIMS™ System offers something that no other data system or technology can possibly match—the support you get from your Cat® Dealer. While some VIMS users choose to interpret their own data, many rely on their Cat Dealer for data analysis and recommendations. Your Cat Dealer offers the knowledge, resources and experience to effectively interpret the variety and volume of data generated by the VIMS System.

Aided by experienced systems experts at Caterpillar, your Cat Dealer may be able to offer recommendations you might not have considered—providing more value from the VIMS System and even better results for your entire operation.

See your Cat Dealer today and learn more about how the VIMS System gathers data, guides decision making and delivers results.

