

HOW DO YOU GAIN A COMPETITIVE EDGE?

**TODAY'S TECHNOLOGIES  
OPEN UP NEW  
OPPORTUNITIES.**



# EVERY DAY, YOUR MINE SENDS COUNTLESS MESSAGES IN THE FORM OF DATA.

Are you listening?

Cat® MineStar™ is. It collects data, organizes and analyzes it, and turns it into insightful information you can use to get more out of your operation. More efficiency. More flexibility. More profitability.

## CAT® MINESTAR™



### TACKLE EVERYDAY CHALLENGES

For mines large and small, above and below ground, Cat MineStar helps you deal with the challenges you face every day: Controlling costs. Extending equipment life. Enhancing safety.

Cat MineStar fits right into your current operation—working with **ANY BRAND OF EQUIPMENT** and sharing data across existing machines, systems and technologies.

Apply Cat MineStar in certain operations or all around your site. Choose one capability to address a need like accident avoidance or maintenance tracking, or combine several capabilities into a more comprehensive solution.

Whatever size or type of mine you run, the tools and insights to help you make informed, confident decisions are out there—and we're there to help you find your edge.

MIXED FLEET > SHOVEL  
HITACHI

MIXED FLEET > TRUCK  
KOMATSU

MIXED FLEET > DRILL  
JOY GLOBAL

MIXED FLEET OPERATIONS

- KOMATSU
- LIEBHERR
- HITACHI
- VOLVO
- P&H
- SANDVIK



# WHAT'S YOUR CHALLENGE?

If you're looking for new ways to reduce costs, boost production and optimize every aspect of your operation, Cat MineStar can help. Here are just a few examples of how it can help you address specific challenges:



- Having facts about fuel burn, downtime and other expenses at your fingertips means you can take action quickly and confidently.
- Operator-assistance tools lead to more precision and accuracy, reducing dollars spent on fuel, surveying and rework.
- Monitoring equipment health data allows you to fix problems before they require major expenditures in financial or human resources.



- Guidance tools give operators confidence to work more precisely and productively all shift long.
- Drilling down into details about specific sites, fleets, machines and operators lets you identify and replicate high-production areas.
- Knowing what's happening across your operation enables you to right-size your fleet and move equipment and personnel where they're needed most.



- Driving predictability reduces rework and re-handling that can lead to excessive equipment wear.
- Tracking maintenance and service limits prevents premature failures and keeps equipment operating at peak performance longer.
- Real-time feedback and office reporting let you order parts, schedule service, provide training or call in machine experts proactively.



- You can use Cat MineStar technologies with any brand of equipment and most business management systems.
- "What if" capabilities let you see the effects of operational changes before you make them, streamlining your work.
- How you choose to use the data is up to you: Take a big-picture look at your entire operation, or zoom in on specific sites, fleets and machines.





FLEET

# DO YOU KNOW WHAT'S HAPPENING? MASTER YOUR MINE. YOUR WAY.

KNOW MORE ABOUT WHAT MATTERS, SO YOU CAN REPLICATE WHAT'S WORKING AND FIX WHAT'S NOT.

Cat Fleet analyzes operational and equipment data up and down your value chain, then gives you insights to run a leaner operation, driving best-in-class performance in everything from equipment scheduling and material movement to fuel monitoring and cycle times.

## RUN LEAN WITH CAT FLEET.

- Drive predictable, repeatable performance in everything from efficient shift changes to equipment scheduling, material movement, fuel use and cycle times
- Take a big-picture look at your entire operation, then drill down into details about specific sites, fleets, even individual machines and operators
- Identify and replicate successes consistently across your operations
- Uncover areas for improvement and adjust as needed
- Keep your operation running safely and at peak performance



TRUCK #91  
**LOW ON FUEL**  
REDIRECTING TO FUEL BAY

TRUCK #782  
**OFF ROUTE**  
ALERTING OPERATOR

HAUL ROAD #12  
**SPILLAGE**  
ALERTING CREWS & CONTROLLER

2ND SHIFT  
**CLOCKED IN ON-TIME**  
ASSIGNING JOB TASKS

SHOVEL #6  
**UNDERUTILIZED**  
BALANCING FLEET TO MEET TARGETS

LOADER #9  
**DUE FOR PLANNED MAINTENANCE**  
ASSIGNING TO SHOP





WHAT'S YOUR PLAN?

## THERE MAY BE A WAY TO WORK IT MORE EFFICIENTLY.

**WHEN YOU'RE DRILLING, DIGGING, LOADING OR GRADING, YOU WANT TO GET THE MOST OUT OF EVERY MACHINE.**

Cat Terrain gives you and your operators the guidance tools, live feedback and confidence to boost utilization, reduce variability and work according to plan—safely, accurately, consistently and efficiently.

### HIT YOUR TARGETS WITH CAT TERRAIN.

- Increase drill capacity, material accuracy and crusher throughput
- Drive consistency in payloads and bench heights
- Help operators work more precisely and productively all shift long
- Use real-time feedback on operator performance and office reporting to make changes early, correct errors and replicate successes
- Right-size your fleet, minimize rehandle and spend less on fuel, surveying and rework
- Streamline everything from drilling accuracy and blasting to ore control and site planning



WHAT DO YOU SEE?

## A TEAM THAT ARRIVES HOME SAFELY.

**YOU DO ALL YOU CAN TO KEEP YOUR PEOPLE OUT OF HARM'S WAY.**

Cat Detect gives you the tools to be even more vigilant, so you can send your people home safely and keep the costs of lost time and damaged equipment to a minimum.

### WORK SAFER WITH CAT DETECT.

- Give your operators a better view of what's happening around any machine—existing or new, regardless of manufacturer
- Automatically alert operators to hazards by combining cameras and radar into a true object detection system
- Provide proximity warnings, speed violations and avoidance zones by adding satellite capabilities
- Detect the onset of operator fatigue or distraction and intervene before accidents occur with in-cab safety systems
- Encourage operators to buckle up every time with seat-belt monitoring systems
- Leverage incident capture, playback and reporting to improve operator safety performance







HEALTH

DO YOU HEAR THAT?

# YOUR EQUIPMENT MAY BE TELLING YOU SOMETHING.

**KNOWING WHAT'S GOING ON INSIDE YOUR EQUIPMENT PUTS YOU ONE STEP AHEAD IN THE COST-CONTROL BATTLE.**

Cat Health helps you make that connection—with any brand of equipment—so you can head off small problems while they're still small, run machines as efficiently as possible for as long as possible and keep unplanned downtime to a minimum.

### STAY CONNECTED WITH CAT HEALTH.

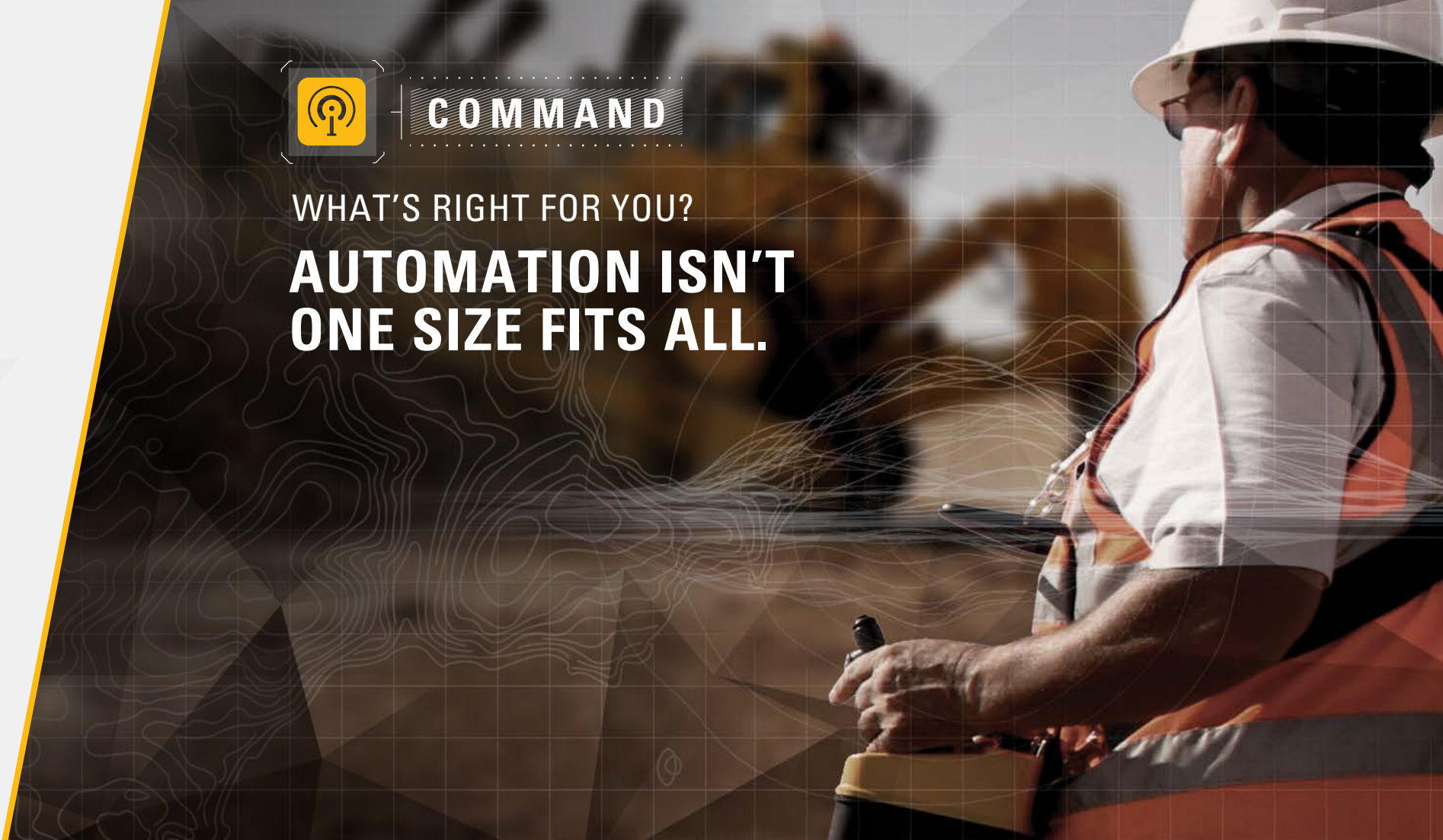
- Monitor critical machine parameters, analyze trends and get real-time alerts when issues arise
- Take action to fix problems before they turn into major repairs
- Track what equipment is due for service
- Make sure equipment maintenance is executed on time
- Monitor how machines perform when they're back on the job



COMMAND

WHAT'S RIGHT FOR YOU?

# AUTOMATION ISN'T ONE SIZE FITS ALL.



**KEEP YOUR PEOPLE SAFE. KEEP YOUR OPERATION EFFICIENT. KEEP YOUR EQUIPMENT RUNNING.**

Any size mine, surface or underground, can agree on these three goals. Cat Command lets you apply the right level of automation—from operator assistance to full autonomy—to achieve them on your site.



### TAKE CONTROL WITH CAT COMMAND.

- Choose the capabilities of automation that make sense for your operation
- Adapt what's working elsewhere to boost safety, efficiency and equipment availability at your mine
- Keep your operators out of harm's way—but still in control—with remote-control or semi-autonomous dozing
- Automate most of your underground load-haul-dump cycle
- Run your haul trucks or drills autonomously—and safely—around other equipment, vehicles and people
- Reduce truck exchange time with truck-spotting guidance consistently



CAT® MINESTAR™



# INSIGHTS THAT GIVE YOU MORE.

Insights that help you plan your work, then work your plan efficiently and safely. That's what you need to run a successful mining operation. That's what Cat MineStar delivers.

For any type of mine, for any size of operation, for any brand of equipment, there's an ideal mix of Cat MineStar technologies and services—and we're there to help you find it. **BUILT FOR IT.**



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