



**See Your Entire Mine.
Your Operational Digital Twin**

Connecting Every Miner. Every Asset. Every Zone.

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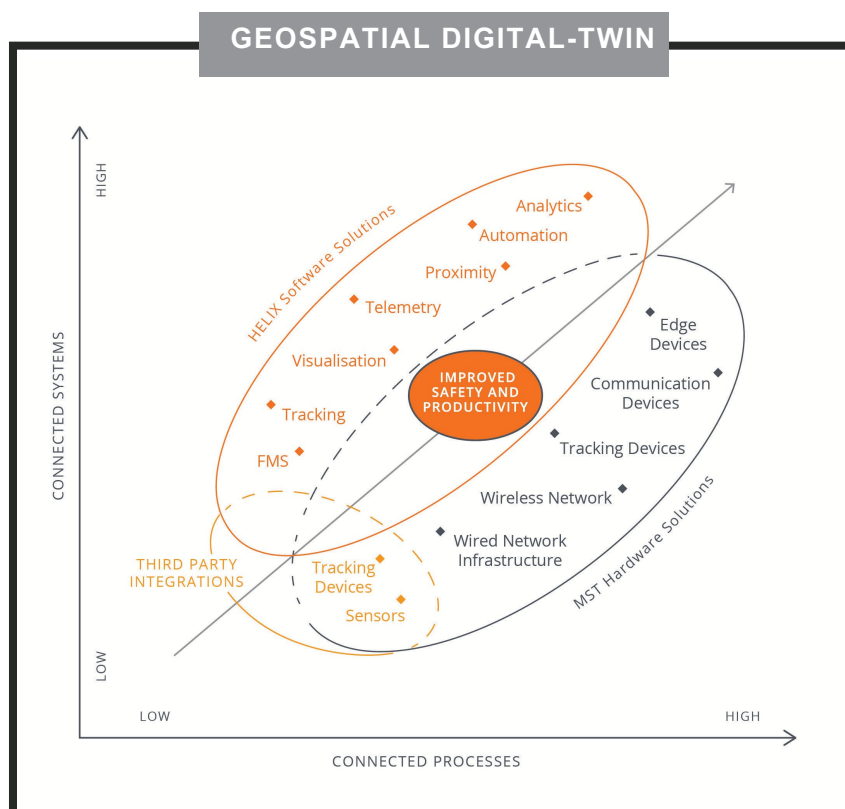
One Digital Twin. Total Operational Awareness.

Every second, a modern mining operation generates thousands of data points from personnel, vehicles, mobile equipment, environmental sensors, industrial systems, communication networks, and operational processes. Yet, despite this abundance of information, many mining operations still struggle to answer the most critical operational questions in real time:

- What is happening right now?
- Where is it happening?
- Who or what is involved?
- What is the operational impact?
- How should we respond?

Too often, the information needed to answer these questions is fragmented across multiple systems, displayed on separate screens, managed by different teams, or arrives too late to support timely decision-making. The result is reduced situational awareness, slower response times, operational inefficiencies, and increased exposure to safety risks.

HELIX 3D Connect was designed to solve this challenge.





The Foundations of Operational Intelligence.

As the Operational Digital Twin at the core of the HELIX ecosystem, HELIX 3D Connect transforms real-time operational data into a single, unified geospatial view of your entire mining operation.

By bringing together personnel, vehicles, mobile equipment, sensors, industrial systems, telemetry, communications, and operational events within one spatial environment, HELIX 3D Connect delivers complete situational awareness—allowing supervisors and operators to understand not only what is happening, but also where, why, and how to respond.

More than a real-time tracking or visualisation solution, HELIX 3D Connect provides the common operational context that connects every source of information across the mine. It is the digital foundation upon which HELIX Sentinel, Smart Monitoring, Intelligent Control, Telemetry, and Dispatch operate together as a single, integrated operational platform.

By transforming isolated data into operational intelligence, HELIX 3D Connect enables faster decisions, safer operations, improved productivity, and the digital foundation required for intelligent automation and the future of autonomous mining.





Critical information is often generated by independent systems that operate in isolation, making it difficult to build a complete picture of the operation, identify emerging risks, or understand how one event affects another.

As operations become more connected and complex, true operational awareness depends on more than collecting information; it requires transforming data into context, context into understanding, and understanding into action.

HELIX 3D Connect is built on the fundamental capabilities that make this possible. Together, they create a living Operational Digital Twin where people, assets, equipment, industrial systems, and operational events become part of a single, continuously updated operational environment.

These foundations enable mining teams to see the complete operational picture, respond with confidence, and build the digital platform required for safer, smarter, and more autonomous mining operations:

Operational Digital Twin:

- Create a living digital representation of your underground operation where every person, vehicle, sensor, asset, and operational event is visualized within its real geospatial location.

Real-Time Situational Awareness:

- Instantly understand operational conditions across the entire mine through a unified operational view that continuously updates as events occur.

Unified Operational Context:

- Bring together tracking, telemetry, IoT, communications, alarms, and automation into one environment so every operational event can be understood within its complete context.

Multi-Technology Positioning:

- Support Wi-Fi, BLE, UWB and GNSS positioning technologies simultaneously, allowing each area of the operation to use the most appropriate positioning method without changing software.

Open Digital Ecosystem:

- Integrate existing and future operational systems using open standards, enabling HELIX to become the central operational platform for your mine.



Key Capabilities:

Building a complete Operational Digital Twin requires far more than visualization or real-time tracking. It demands a platform capable of capturing information from every corner of the mine, understanding its operational context, and presenting it in a way that enables confident, informed decisions.

HELIX 3D Connect combines a comprehensive set of capabilities that work together to connect people, assets, equipment, communications, industrial systems, and operational data into a single operational environment. Each capability has a specific role, but together they create something far more valuable—a unified, real-time understanding of the entire mining operation.

From advanced visualization and positioning technologies to operational intelligence, communications, and seamless integration with existing systems, every capability contributes to transforming isolated information into actionable insight, empowering mining teams to operate more safely, efficiently, and intelligently.

See Your Entire Operation (Visualization)

- 2D and 3D mine visualization.
- Surface and underground mapping.
- Multi-site visualization.
- Layer management.

Know Where Everything Is (Real-Time Tracking)

- Personnel.
- Vehicles / Mobile equipment / Assets.
- Reverse tracking.
- Historical playback.

Transform Data into Decisions (Operational Intelligence)

- Dashboards / Reporting.
- Live operational status.
- Event visualization.
- Geospatial analytics.

Keep Your Workforce Connected (Communications)

- Direct messaging.
- Voice integration.
- SIP.
- Push-to-Talk.

Position with the Right Technology.

- WiFi.
- BLE.
- UWB.
- GNSS.

Connect Your Digital Ecosystem (Integration)

- IoT.
- Telemetry.
- Cameras.
- Industrial protocols.
- MQTT.
- Third-party systems.



Benefits:

The challenges facing modern mining operations are no longer defined by a lack of information—they are defined by the ability to transform information into timely, confident operational decisions.

By creating a unified Operational Digital Twin, HELIX 3D Connect connects people, assets, equipment, systems, and operational data into a single source of truth. The questions that once required multiple systems, manual interpretation, and valuable time can now be answered instantly through complete real-time operational awareness.

The result is more than improved visibility. It is a safer workforce, faster decision-making, greater operational efficiency, seamless collaboration across systems, and a scalable digital foundation that enables continuous improvement and prepares mining operations for intelligent automation.

These are the measurable outcomes that help mining companies operate more safely, respond more effectively, and build the connected, data-driven mine of the future.

Make Better Decisions Faster:

- Understand operational conditions instantly through a single operational view.

Improve Personnel Safety:

- Maintain continuous visibility of people and assets while accelerating emergency response.

Increase Operational Efficiency:

- Reduce delays by giving supervisors immediate operational awareness.

Connect Every Operational System:

- Eliminate isolated information by integrating tracking, telemetry, sensors and automation into one platform.

Prepare Your Mine for Automation:

- Create the digital foundation required for intelligent control and autonomous operational workflows.

Scale Without Complexity:

- Expand from a single production area to multiple underground operations while maintaining one operational platform.



3D Connect
Interactive Spatial
Insights



Sentinel
Enhanced Safety Monitoring



Intelligent Control
Process Automation



Smart Monitoring
IoT Network



Dispatch
Optimise Fleet
Management.



Telemetry
Track Equipment Health

The Beginning of Your Digital Mine:

Every mining operation has its own challenges, priorities, and path toward digital transformation. There is no single starting point, no universal roadmap, and no one-size-fits-all solution.

What every successful transformation does have in common is a clear understanding of the operation, a scalable technology foundation, and a trusted partner capable of guiding each step of the journey.

HELIX 3D Connect provides that foundation.

By creating a living Operational Digital Twin, it establishes a common operational environment where people, assets, equipment, industrial systems, and operational intelligence work together as one. From improving workforce safety and operational visibility today, to enabling intelligent automation and supporting the autonomous mine of tomorrow, HELIX 3D Connect grows alongside your operation as new technologies, processes, and business objectives evolve.

At MST Global, we believe digital transformation is not a single project—it is a continuous journey of operational improvement. That is why we work closely with every customer to understand their operational challenges, define achievable objectives, and develop a practical, phased roadmap that delivers measurable value while protecting existing investments.

Whether your first objective is to improve personnel visibility, integrate operational systems, enhance decision-making, or lay the foundation for intelligent automation, HELIX 3D Connect provides the platform to begin with confidence—and the flexibility to continue growing into the future.

Digital transformation doesn't begin with technology. It begins with understanding your operation. HELIX 3D Connect and MST Global help you take the next step.



Looking for solutions to improve safety, productivity, and operational performance in your mine?

www.mstglobal.com

- Visit the MST Global website to explore innovative technologies designed for underground mining and tunnelling.
- Discover integrated solutions for communications, automation, IoT, fleet management, personnel tracking, and digital operations, backed by real-world customer success stories, technical resources, product information, and the latest industry innovations.
- Whether you're evaluating new technologies or planning your next digital transformation project, MST Global provides the insights and expertise to help you make informed decisions.

LinkedIn:

- Stay connected with MST Global on LinkedIn and be the first to discover our latest innovations in underground mining technology.
- Follow us for product updates, customer success stories, industry insights, event highlights, expert perspectives, and the latest advancements in automation, connectivity, safety, and digital transformation.
- Join our community and stay informed about the technologies shaping the future of mining.

YouTube channel:

- Explore MST Global's latest innovations in underground mining technology.
- Discover videos featuring communication networks, automation, fleet management, safety solutions, IoT, real-world customer success stories, product demonstrations, and digital technologies designed to improve mine safety, efficiency, and productivity.

Talk to our experts about how to improve underground safety and productivity with HELIX 3D Connect in your mine.



A Komatsu technology brand

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