SourceOne® EKPS

Enterprise Knowledge Performance System

What is SourceOne® EKPS?

SourceOne is an adaptable knowledge system that can **transform into any tool you need**. It enriches data with context, history, and digital workflow automation, laying the foundation for AI and **giving you the answers you're looking for**.

MINING | MANUFACTURING | AGRICULTURE | CONSTRUCTION | OIL & GAS

GEOLOGY & EXPLORATION	**Grade Control** – Visualization of mineral distributions and statistical insights for better ore control.
GEOLOGY & EXPLORATION	**Grade Reconciliation** – Comparing planned vs. actual ore grades in real-time.
GEOLOGY & EXPLORATION	**Blastholes** – Mineral-specific visualization of drilled locations for optimized blasting strategies.
GEOLOGY & EXPLORATION	**Geological Data Management** – Storing, organizing, and analyzing drill hole, assay, and lithology data.
GEOLOGY & EXPLORATION	**3D Geological Modeling** – Creating block models of ore bodies for resource estimation.
GEOLOGY & EXPLORATION	**Resource Estimation** – Calculating ore reserves using geostatistical methods (e.g., variograms, kriging).
GEOLOGY & EXPLORATION	**Drill Planning & Optimization** – Designing efficient drill programs and tracking progress.
GEOLOGY & EXPLORATION	**GIS & Spatial Analysis** – Integrating geological maps, satellite imagery, and exploration data.
MINE PLANNING	**3D Visualization** – Integration of geological, topographic, and operational data into an interactive mine model.
MINE PLANNING	**Haul Route Optimization** – Planning efficient haul road networks to minimize fuel consumption and cycle times.
MINE PLANNING	**Simulation** – Dynamic scenario modeling of mining processes to evaluate strategies and improve decision-making.
MINE PLANNING	**Pit Optimization** – Determining the most profitable pit design based on orebody models and economic constraints.

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MINE PLANNING	**Stockpile Management** – Tracking and blending ore from different sources to ensure required grade.
MINE PLANNING	**Automated Short-Term Planning** – Tools to generate optimal short-term production plans based on real-time data.
MINE PLANNING	**Dynamic Fleet Allocation** – Fleet dispatching tools to optimize haul truck assignments in real time.
DRILL & BLAST	**Blasting Strategies** – Optimizing blasting strategies based on mineral data and spatial distribution.
DRILL & BLAST	**Seismic Monitoring & Prediction** – Models blast-induced vibrations to minimize damage to nearby structures.
DRILL & BLAST	**Powder Factor Calculation** – Determines the ideal amount of explosives for different rock types.
DRILL & BLAST	**Drill Pattern Planning** – Automating drill hole placement based on geology and ore control.
DRILL & BLAST	**Explosives Management** – Tracking usage, storage, and regulatory compliance for explosives.
FMS	**Tracking Slowdown Points** – Integration of FMS data to visualize haul route inefficiencies.
FMS	**Identifying Congestion Areas** – Machine learning analysis to create a filter of haul road data for traffic optimization.
FMS	**Calculating Utilization and Efficiency** – Equipment telemetry analysis for fleet performance and asset management.
FMS	**Fleet Management Simulation** – Evaluating equipment requirements and performance under different planning scenarios.

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FMS	**Risk Calculated Routing** – Simulated haulage routes based on profitability and operational constraints.
PRODUCTION & OPERATIONS	**Shift Report** – Detailed reports on productivity, equipment performance, and operator efficiency.
PRODUCTION & OPERATIONS	**Production Estimation** – Forecasting of material movement and processing rates for optimized planning.
PRODUCTION & OPERATIONS	**Production Scheduling** – Optimizing short-term and long-term mining sequences.
PRODUCTION & OPERATIONS	**Ventilation & Safety Management** – Analyzing airflow simulation and monitoring hazardous gases underground.
PRODUCTION & OPERATIONS	**Energy & Water Management** – Optimizing power consumption and water usage in operations.
PROCESSING & METALLURGY	**Plant Process Optimization** – Monitoring and adjusting grinding, flotation, leaching, etc.
PROCESSING & METALLURGY	**Metal Recovery & Reconciliation** – Tracking recovery rates and material losses.
PROCESSING & METALLURGY	**Comminution Circuit Simulation** – Optimizing crushing and grinding efficiency.
PROCESSING & METALLURGY	**Flotation & Chemical Process Control** – Managing reagent usage and recovery efficiency.
PROCESSING & METALLURGY	**Hydrometallurgy & Pyrometallurgy Modeling** – Simulating leaching, smelting, and refining.
PROCESSING & METALLURGY	**Waste & Tailings Management** – Monitoring slurry flow, water recycling, and environmental impact.

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BUSINESS PROCESS	**Business Goals** – Tools for writing new business goals.
BUSINESS PROCESS	**Visualization of Business Goals** – Viewing set defined business goals by all the members of the team.
BUSINESS PROCESS	**Business Processes** – Workspace dedicated to designing and recording business processes with specially built tools for this.
BUSINESS PROCESS	**BPMN Collaboration** – Centralized platform for teams to design, monitor, and optimize workflows.
ONTOLOGY	**Domain-Specific Ontology Design** – Defining core concepts, relationships, and hierarchies tailored to the industry.
ONTOLOGY	**Semantic Relationships** – Establishing relationships like "is_a," "part_of," and "depends_on" to connect entities.
MAPPING	**Source-to-Target Mapping** – Mapping raw data fields (e.g., sensor data) to ontology entities and attributes.
AI	**Deriving Predictive Features** – Using ontology relationships to create meaningful features for AI models.
AI	**Contextual Predictions** – Leveraging ontology mappings to provide context for AI decisions.
AI	**AI Chatbot** – Automated responses for common mining-related queries, improving operational support and decision-making.
MODELLING	**Variograms** – Analyzing spatial variability of geological properties, optimizing resource estimation and drilling strategies.
MODELLING	**Linear Regression** – Predicting ore grades, equipment performance, and operational costs based on historical data trends etc.

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MODELLING	**Polynomial Regression** – Modelling complex relationships in ore grades, mineral processing, and equipment wear patterns.
MODELLING	**Gradient Boosted Tree Regression** – Enhancing predictive accuracy in mining by modeling complex patterns.
MODELLING	**Desurvey** – Correcting drill hole deviations, ensuring accurate 3D modeling of ore bodies and geological structures.
MODELLING	**Compositing** – Standardizing drill hole sample lengths, ensuring consistent grade estimation and accurate resource modeling.
DATA STRATEGY	**Data Governance** – Standardizing data collection, enforcing quality controls, and maintaining audit trails.
DATA STRATEGY	**Centralized Data Storage** – Managing geological, operational, and financial data in a unified system.
DATA STRATEGY	**Version Control & Auditing** – Tracking changes in geological models, mine plans, and reports.
DATA STRATEGY	**ETL (Extract, Transform, Load) Processes** – Cleaning, transforming, and loading data into analytical tools.
DATA STRATEGY	**Data Governance & Compliance** – Ensuring data integrity, security, and regulatory compliance.
DATA STRATEGY	**Real-time Reporting & Dashboards** – Generating insights from operational and business data.
DATA STRATEGY	**Big Data Integration** – Combining IoT, sensor, and real-time monitoring data for analysis.
DATA STRATEGY	**Automated Data Ingestion** – Streaming data from equipment, sensors, and external sources.

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BUSINESS ANALYTICS	**Charts** – Visualizing key mining metrics for performance tracking and decision-making.
BUSINESS ANALYTICS	**Ore Profitability Analysis** – Evaluating mine profitability by ore type using production costs, market prices, and recovery rates.
BUSINESS ANALYTICS	**Supply Chain & Inventory Management** – Tracking materials, spare parts, and logistics efficiency.
BUSINESS ANALYTICS	**Operational Performance Dashboards** – Real-time KPIs for production, downtime, and efficiency.
BUSINESS ANALYTICS	**Scenario Analysis & Decision Support** – Evaluating different operational strategies under uncertainty.
BUSINESS ANALYTICS	**Cost Control & Budgeting** – Analyzing expenditures, cost-per-ton metrics, and financial optimization.
FINANCIALS	**Financial Analysis** – Real-time tracking of production costs, revenue, and profitability metrics.
FINANCIALS	**Cost per Ton Analysis** – Tracking production costs per ton, including mining, processing, and logistics expenses.
FINANCIALS	**Budget vs. Actual Costs** – Comparing planned budgets with real-time operational expenditures to identify cost deviations.
FINANCIALS	**Revenue Forecasting** – Predicting future revenue based on ore grades, market trends, and production rates.
FINANCIALS	**Break-even Analysis** – Calculating the minimum production required to cover operational costs and ensure profitability.
FINANCIALS	**Capital Expenditure Planning** – Assessing investment requirements for equipment, infrastructure, and expansion projects.

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FINANCIALS	**Operational Cost Optimization** – Identifying inefficiencies in fuel usage, labor, and maintenance to reduce overall expenses.
FINANCIALS	**Cash Flow Projection** – Forecasting short-term and long-term cash flow based on production schedules and market conditions.
FINANCIALS	**Maintenance Costs** – Analyzing spare parts costs and maintenance estimation for smooth production.
HUMAN RESOURCES	**Workforce Scheduling** – Optimizing shift planning to balance labor costs, productivity, and compliance.
HUMAN RESOURCES	**Performance Monitoring** – Evaluating worker productivity, attendance, and key performance indicators.
HUMAN RESOURCES	**Fatigue Management** – Monitoring work hours and rest periods to reduce accidents and enhance safety.
HUMAN RESOURCES	**Incident & Safety Reporting** – Logging workplace incidents, near-misses, and safety compliance data.
HUMAN RESOURCES	**Employee Engagement & Retention** – Using analytics to assess job satisfaction and reduce turnover.

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