



3DEXPERIENCE®

MATERIAL TRACKING AND RECONCILIATION POWERED BY MINE OPERATIONS MANAGEMENT (MOM)

**DS DASSAULT
SYSTEMES** | The 3DEXPERIENCE® Company



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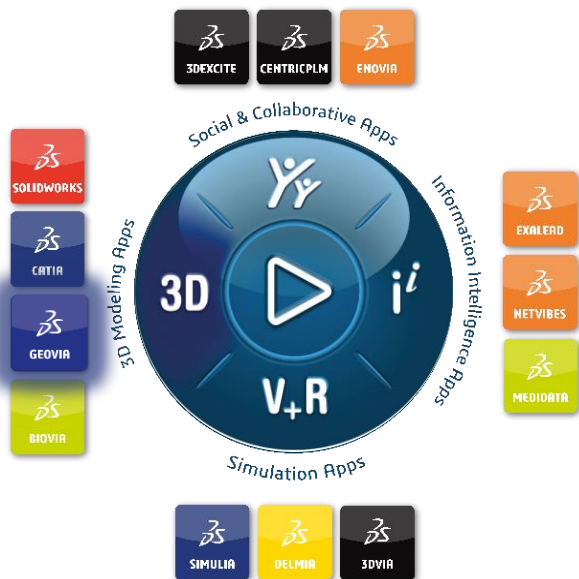


THE 3DEXPERIENCE PLATFORM

The platform powers multiple Brands to drive transformation across the Mining, Metals & Minerals segments

Brands

Industries



**Infrastructure,
Energy & Materials**

- Mining
- Metals & Minerals



Dassault Systèmes customer in Mining



Notes:

Selected accounts have been included; logos have been positioned across regions according to their respective HQ location

REFLECTING ON CURRENT CHALLENGES

“Australia is a major supplier of minerals globally, but the country’s ability to meet both projections for future demand and sustainability goals is hampered by a range of environmental and social issues associated with traditional modes of minerals production.” – T.Prior, J.Daly, L. Mason, D.Giurco

“Changing environmental conditions, heightened stakeholder expectations and resource demand pressures have forced the mining sector to continually improve their operational practices whilst engage in Corporate Social Responsibility practices.” - S.McDonald, S.Young



REFLECTING ON CURRENT CHALLENGES



LESSONS FROM THE PAST

Insights for the Future of Mining

Data- Driven decision making where, mining companies can anticipate equipment failures, optimize ore recovery, and adjust operational parameters to enhance productivity and minimize downtime

Common data environment where all stakeholders can access real-time insights and updates on mine activities facilitating **Cross-Disciplinary Collaboration**.

Flexibility across various project sizes and operational needs. These technologies are designed to be **adaptable**, enabling companies to start small and expand as their operations grow,

Technologies that increasingly are built on **extendable platforms** that support the seamless integration of new functionalities as operational needs evolve.

Traceability across the mining value chain, enabling companies to document every step of their operations transparently. Also, ability to manage **operational thresholds and accountability**.





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MATERIAL TRACKING & RECONCILIATION WITH MINE OPERATIONS MANAGEMENT

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Unlocking value across the mine lifecycle



WHY MATERIAL TRACKING IN MINE OPERATIONS

SEAMLESS MINE OPERATIONS

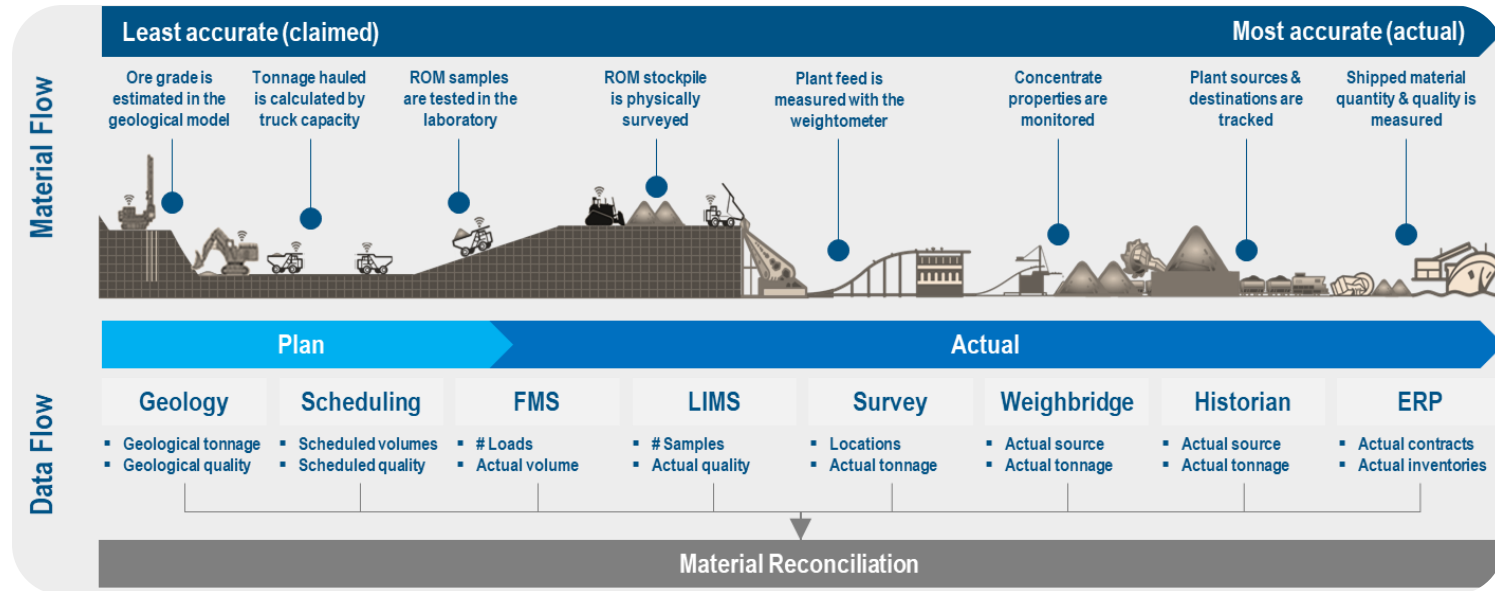
1. Break Down Data Silos
2. Unified Data Platform & High-Quality Data
3. Simplify Reconciliation Process
4. Foundation for Data-Driven Decision Making
5. Platform solution for all mine execution & monitoring



MINE OPERATIONS MANAGEMENT

HOW | Break Down Data Silos

1. Free flow of information between departments
2. Single source of truth

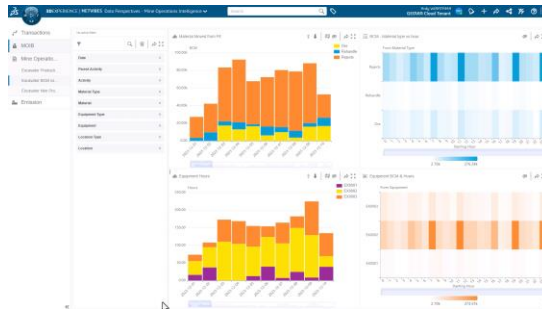
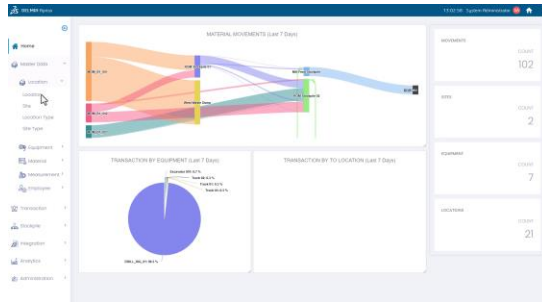


MINE OPERATIONS MANAGEMENT

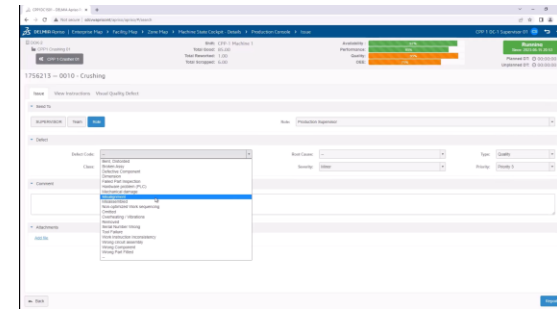
Components of Mine Operations Management (MOM)



MINE OPERATIONS MANAGEMENT- A PRODUCTION MANAGEMENT SYSTEM

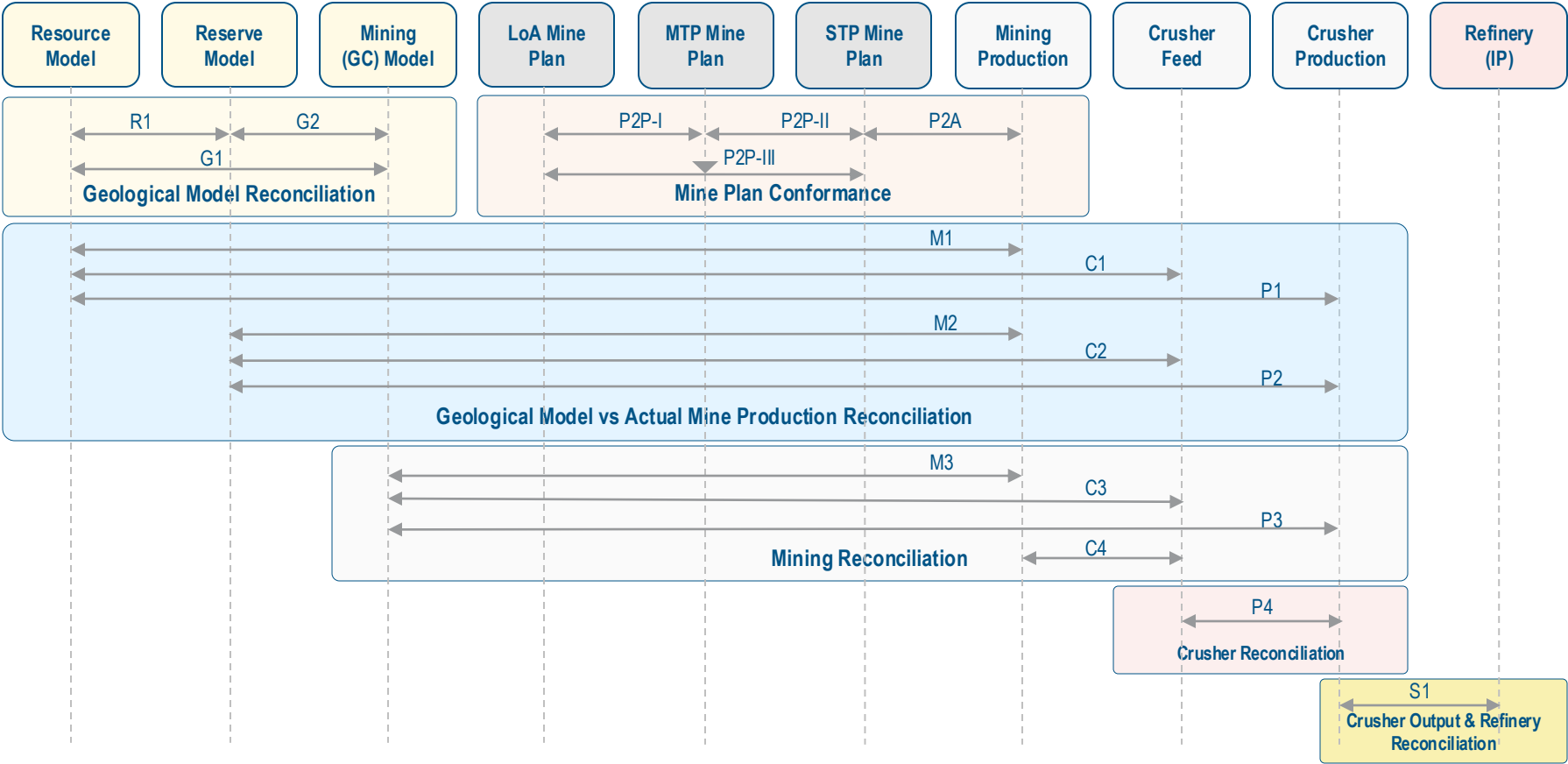


Material Reconciliation: Material balance allows to trace movements across different envelopes to account for inaccuracy



Asset Performance & Operational Control: Digitize and coordinate production workflows, optimize resource allocation, track workforce hours in real-time, and proactively mitigate delays and labor disruptions.

Currently Considered: Reconciliation Process Envelope



CASE STUDY

Tier-1 Industrial Minerals Miner	<p><u>Location:</u> Australia</p> <p><u>Commodity:</u> Mineral Sands</p> <p><u>Number of sites:</u> 9 (pit-to-plant)</p> <p><u>Payback period:</u> 1 year</p>	
Business Challenge	Value Proposition	Benefits Unlocked
<p>Material Reconciliation</p> <p>Low <input type="radio"/> Medium <input type="radio"/> High <input checked="" type="radio"/></p> <p>Assets Performance</p> <p>Low <input checked="" type="radio"/> Medium <input type="radio"/> High <input type="radio"/></p> <p>Work Management</p> <p>Low <input checked="" type="radio"/> Medium <input type="radio"/> High <input type="radio"/></p>	<ul style="list-style-type: none"> Replaced under-performing third-party system, including historical data migration & integration with enterprise systems Delivered state-of-the-art material tracking (46 active compounds) & balancing, and stockpile management (LIFO) Automate data capture & analysis in order to maximize confidence in reporting and foster predictive decision-making 	<p>↑ Production tonnage (~15%) due to enhanced materials balancing & metals accounting (planned vs. actual)</p> <p>↓ Grade variance (~5%) thanks to short-interval control monitoring and long-to-short term ore control</p> <p>↑ Operational agility due to centralized data management (single source of truth), enabling predictive decision-making</p>

CASE STUDY

Tier-1 Diversified Miner	<u>Location:</u> Australia <u>Commodity:</u> Zinc, Lead, Silver <u>Number of sites:</u> 3 (pit-to-plant)	<u>Payback period:</u> 1 year
Business Challenge	Solution Deployed	Value Unlocked
<p>Material Reconciliation</p> <p>Low <input type="radio"/> Medium <input type="radio"/> High <input checked="" type="radio"/></p> <p>Assets Performance</p> <p>Low <input checked="" type="radio"/> Medium <input type="radio"/> High <input type="radio"/></p> <p>Work Management</p> <p>Low <input type="radio"/> Medium <input checked="" type="radio"/> High <input type="radio"/></p>	<ul style="list-style-type: none"> Enhance the accuracy & confidence in material quantity (tonnage) and quality (grade) from pit-to-crusher-to-mill Deliver a state-of-the-art stockpile management solution in order to track complex ore requirements Automate data capture (with third-party systems) & analysis in order to establish a reliable material balance process 	<p>↓ Operating costs (~3%) due to a better understanding of activities (loading, blasting, etc.) & optimization of resources</p> <p>↑ Recovery rate (~0.5%) due to automated data reporting & analysis, allowing more confident & disciplined grade control</p> <p>↑ Business visibility & productivity due to the centralized & automated data capture, unlocking time for value-add activities</p>

KEY TAKEAWAYS

- ❖ High-quality data is the foundation for data-driven decisions.
- ❖ Mine Operations Management
 - ❖ Helps mining companies to breakdown data silos through its Unified Data Platform.
 - ❖ Improves the quality of production data through its in-built validation algorithm.
 - ❖ Simplify end of cycle process by standardizing the procedure to perform reconciliation.
 - ❖ Single adaptive solution for mine, processing plants and different functions.

