



MINEMARKET

Guinea Alumina Corporation

CUSTOMER SUCCESS STORY

GAC Automated Their Systems and Transformed Their Operations with MineMarket, Saving Over 60 Man-Hours Every Day.



The Customer

Guinea Alumina Corporation (GAC) is the bauxite mining subsidiary of Emirates Global Aluminium, the world's largest 'premium aluminium' producer. GAC employs 3,000 people, with their site containing almost 400 million tonnes of bauxite mineral resources. Their operation is 690 square kilometres, located in the northwest of Guinea.

GAC have an exhaustive and crucial mine-to-market operation. Bauxite ore is exploited in the mine located closed to Sangaredi in the Boke province and railed for approximately 90km to the port facilities in Kamsar, on Guinea's Atlantic coast. Car dumpers unload the bauxite ore, and a Stacker/Reclaimer operation loads material onto a barge loading conveyor belt. The barges navigate 37km into deeper waters where it is transhipped into Capesize vessels. The ore is then shipped by sea to customers in different locations all around the world. GAC's facilities include some of the largest pieces of equipment ever installed in an African mining project.

The Challenges

Prior to implementing MineMarket, GAC had no systematic data management. Data was manually collected and entered into spreadsheets. The spreadsheets were used to calculate, track, analyse and report generation.

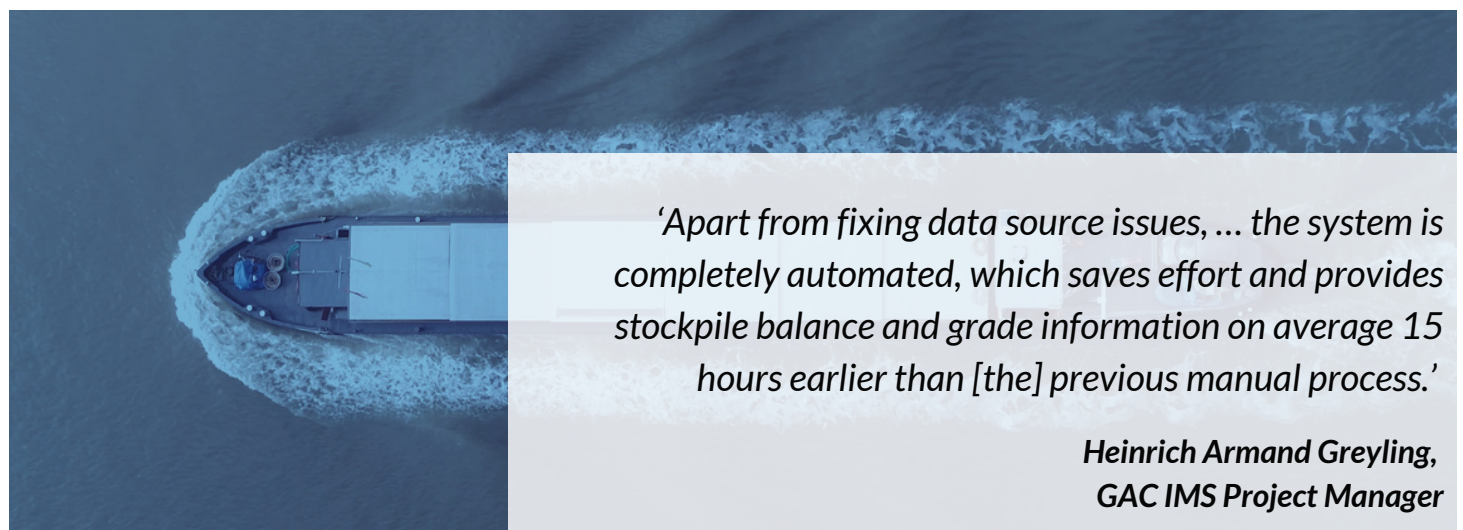
Data entry and validation took many hours every day for many employees across the entire business. Collecting, cleansing and entering data across the operation (mine, processing, railing, port and shipping) could take around 30 man-hours every day. Mine planners entered blocks into spreadsheets that would be emailed to mine contractors who would enter that same data manually into another system. Mining movements for every shift were recorded in spreadsheets before being consolidated into a daily movement report. Of course, at every stage, time would also be spent validating and reconciling the data.



The Solution

MineMarket provides the broadest coverage for managing the mining value chain by combining comprehensive material tracking, logistics management, and complex sales and marketing capability into a single solution. Through connecting operational data and its relationships from mine to customer, MineMarket maximises commercial outcomes by optimising logistics, charting the impact of sales, and tracking and identifying operational bottlenecks. MineMarket minimises delays in data collection, ensuring the same data is visible across the organisation, which facilitates analysis, adjustment and reconciliation. MineMarket can be used in conjunction with other business systems, integrates seamlessly with other Datamine solutions, and provides sophisticated reporting and web service integration capabilities.

MineMarket delivers increased supply chain visibility, enforces standardised business processes, improves control of production, supports complex commercial planning and operations, and enables regulatory compliance.



The Results

GAC implemented MineMarket in two phases. The project started in 2018. In the first phase, data entry was still manual, but MineMarket supported the calculations. Having all material inventory information in one system made calculating stock balances easier and more accurate.

Datamine's willingness to enhance and improve the software to support industry 4.0 (i4.0) interoperability interface requirements was critical in moving to the next phase.

GAC's second phase implementation of MineMarket went live from pit to port in November of 2021. This implementation takes advantage of full i4.0 integration, with automated data capture, calculations and publishing of stockpile states. With this automation, GAC can send more granular data to MineMarket, enabling real-time visibility of their inventory from blocks, through ROMS, post-crushing stocks, railing, port and shipping. Grade information is also available in real time as each sample analysis result is received.



The Results Continued

Heinrich Armand Greyling, GAC IMS Project Manager, summarises the results, 'Apart from fixing data source issues, ... the system is completely automated, which saves effort and provides stockpile balance and grade information on average 15 hours earlier than [the] previous manual process.'

GAC are currently retraining employees and redeploying the time previously spent on manual tasks. Importantly, they are utilising this time to gain insights for business improvement initiatives. Operationally, they have greater control of grades throughout the value chain and have been able to seize opportunities to load barges directly from trains instead of rehandling stock at the port.

This was a challenging project on multiple fronts including i4.0 interface development and testing, COVID-19 impacts restricting site travel and engagement, changes in GAC's teams and the workforce over the project duration, and the transition from ABB to Datamine. However, Heinrich explains that 'The Datamine MineMarket team have accommodated to our challenges very well with all things considered. The team has been really good to work with.'

With MineMarket, GAC are now in a great position to integrate future extensions to their i4.0 architecture.



- ✓ MineMarket replaced disparate spreadsheets and systems
- ✓ Granular and consolidated data now available for improved real-time decision making
- ✓ Automated data entry utilising industry 4.0 architecture
- ✓ Up to 30 man-hours of manual data entry every day eliminated
- ✓ Data entry for blocks that was a full-time job replaced with 1 hour per day for reconciliation and review
- ✓ Daily stock movement reports automated
- ✓ Saved time now being spent on business improvement initiatives
- ✓ Reduced off-spec incidents and stock rehandling at port





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