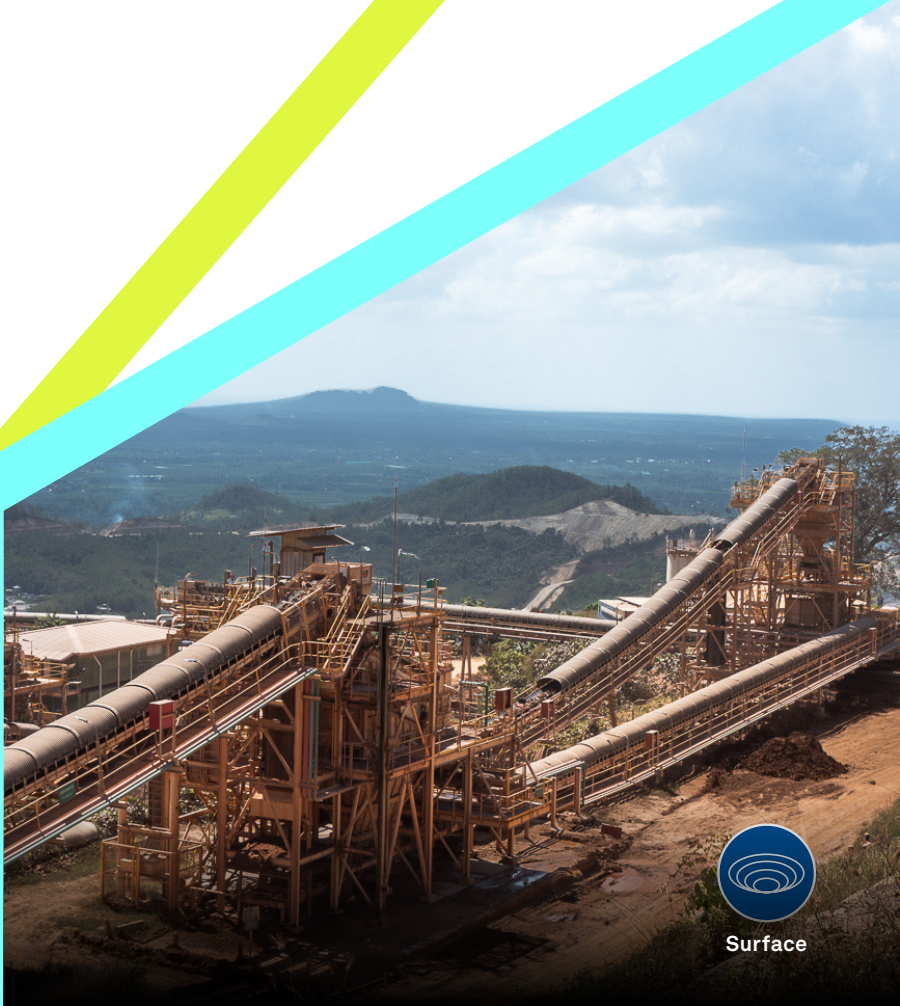
HEXAGON

MERDEKA COPPER GOLD

BUMI SUKSESIND COPPER AND GOLD

TUJUH BUKIT OPERATIONS

Driving fleet productivity at Tujuh Bukit





Customer

Tujuh Bukit Gold Mine in Banyuwangi, East Java, is operated by PT Bumi Suksesindo (BSI), a subsidiary of PT Merdeka Copper Gold Tbk. One of Indonesia's largest gold mines and Merdeka's flagship asset, Tujuh Bukit began operations in 2016 and continues to pursue improvements in operational efficiency and productivity.

Challenge

BSI wanted to achieve more consistent fleet productivity across shifts while reducing inefficiencies in its load and haul operation.

Dispatch decisions had relied heavily on manual coordination and operator experience, making it difficult to identify and address issues such as truck queuing, unnecessary travel, fuel waste, and ore misrouting while a shift was under way.

The challenge was not simply to collect more data, but to give teams the visibility and capability to use it in time to improve operational decisions.

Solution

BSI implemented Hexagon OP Pro, supported by Hexagon Smart Centre consulting, to provide real-time visibility into fleet activity and help optimise equipment allocation across the mine.

OP Pro enables trucks to be dynamically assigned according to the latest requirements of loading equipment, helping reduce queue and hang time while improving productivity.

Smart Centre consulting complemented the technology with training, operational expertise, and continuous performance engagement. Working with BSI, Hexagon focused not only on implementation, but also on transferring knowledge, embedding best practices, and continuously fine-tuning the OP Pro Optimiser to reflect changing mine conditions.

The approach reflects the project's people-led focus: technology as an enabler, supported by training and ongoing expertise to help site teams sustain improvements in daily decision-making.

Results

Within six months of FMS adoption, BSI reported significant improvements across productivity, operating cost, fuel efficiency, and recovery.

11%
increase in truck productivity

17%
increase in excavator productivity

17%
reduction in truck queue time

53%
reduction in excavator hang time

14%
reduction in load and haul costs

9.5%
reduction in fuel ratio

3,405
tonnes annual reduction in **CO_2 emissions**

600+
oz additional gold recovered through minimised ore loss

The productivity gains followed increased adoption of OP Pro's Optimiser, which dynamically adapts truck-shovel assignments as operating requirements change. BSI reported truck productivity increasing by 11% and excavator productivity by 17%, alongside substantial reductions in queue and hang time.

Greater operational efficiency also reduced fuel consumption and environmental impact. BSI recorded a 9.5% reduction in fuel ratio and an annual CO_2 reduction of approximately 3,405 tonnes.

High-precision GPS guidance provided a further benefit by helping loading equipment operate accurately within defined blocks. With average loading accuracy of less than 20 centimetres, BSI reported more than 600 ounces of additional gold recovered through minimised ore loss and dilution.

Just as importantly, BSI has embedded the technology into its operating practices. High system compliance and Optimiser adoption demonstrate how the combination of technology, operational expertise, and knowledge transfer is helping make improvements repeatable across shifts rather than dependent on individual operators.



> "Through OP Pro and Smart Centre consulting, the focus was not only on the system implementation, but also on transferring knowledge and embedding best practices within the organisation."
>
> *Erik Wibisana Barnas, Technical Services Senior Manager, PT Bumi Suksesindo*

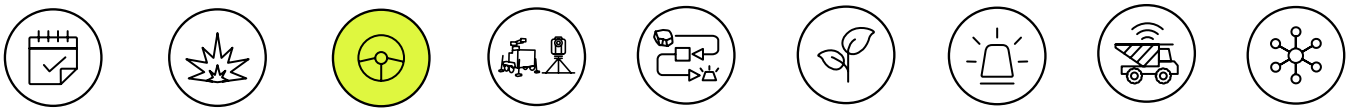


HEXAGON

About Hexagon:

Hexagon is the global leader in measurement technologies. We provide the confidence that vital industries rely on to build, navigate, and innovate. From microns to Mars, our solutions ensure productivity, quality, and sustainability in everything from manufacturing and construction to mining and autonomous systems. Hexagon's Mining Division connects measurement and autonomy across surface and underground operations, pushing the boundaries of autonomous technology and data insights to help customers optimise resources and move material safely.

This offering includes solutions to support:



Connect with us

hexagon.com/mining | info.min@hexagon.com

© 2026-2028 Hexagon AB and/or its subsidiaries and affiliates. All rights reserved.

20260915