



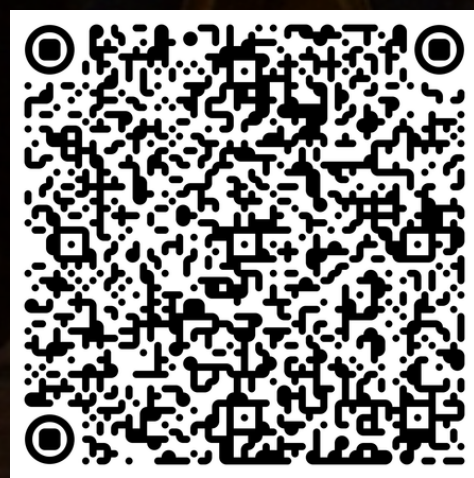
CASCADIA
SCIENTIFIC

MINING DATA

FOR MINING PROFESSIONALS



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CEO



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Get Started



Cascadia Scientific's ML Platform

01. Tactical guidance to understand, support and guide fuel reduction strategies

02. The lens to evaluate fuel reduction and decarbonization initiatives

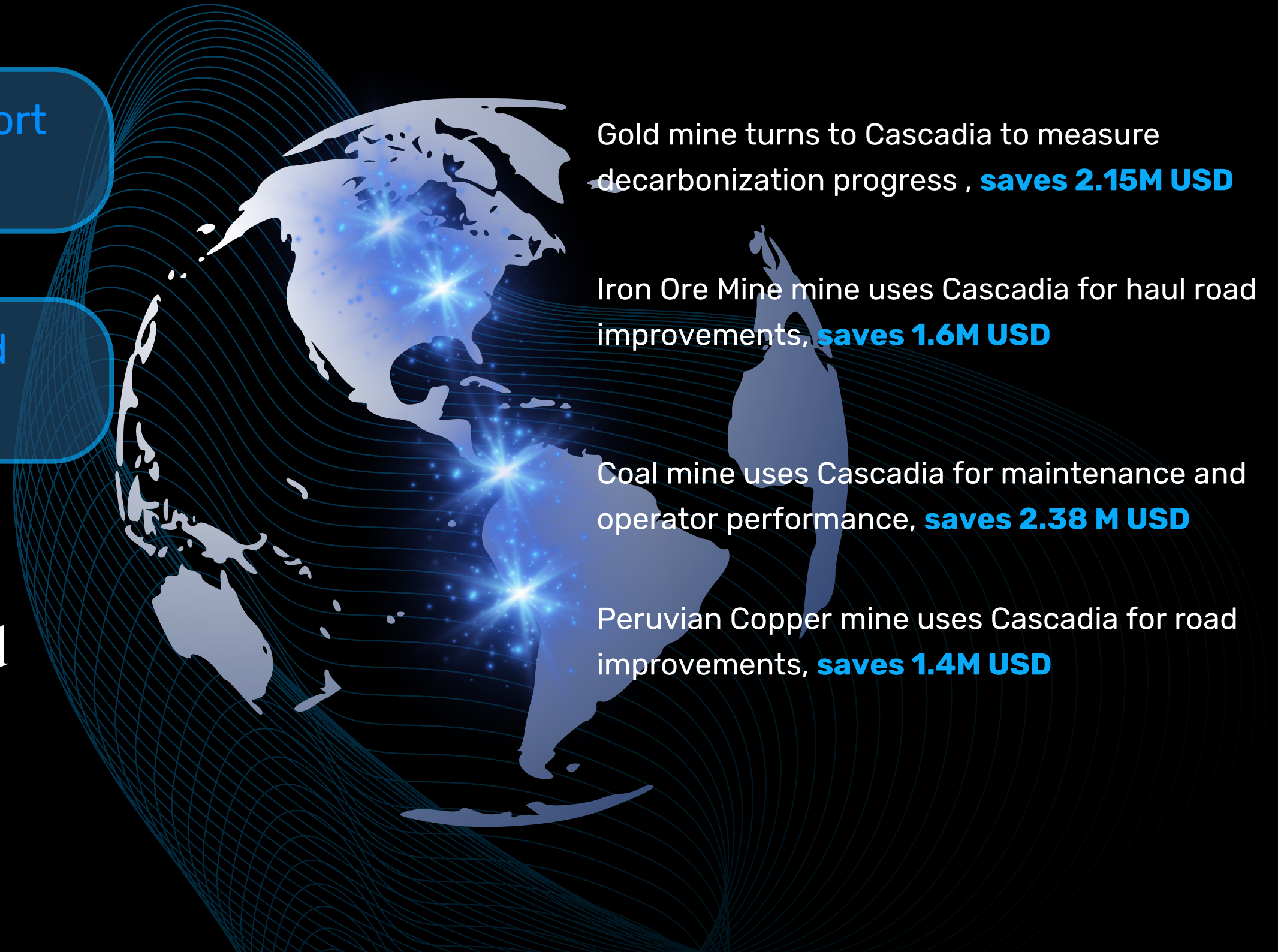
Focus on **extracting ore** from the ground
Let us extract **value from your data**

Gold mine turns to Cascadia to measure decarbonization progress , **saves 2.15M USD**

Iron Ore Mine mine uses Cascadia for haul road improvements, **saves 1.6M USD**

Coal mine uses Cascadia for maintenance and operator performance, **saves 2.38 M USD**

Peruvian Copper mine uses Cascadia for road improvements, **saves 1.4M USD**



Service Overview



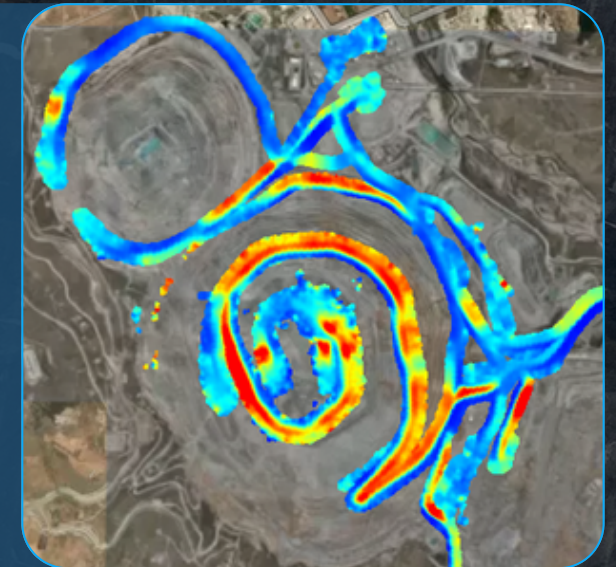
01. Hardware & Data Propagation

Mining specific sensors installed to collect high accuracy data on fuel consumption & equipment utilization.



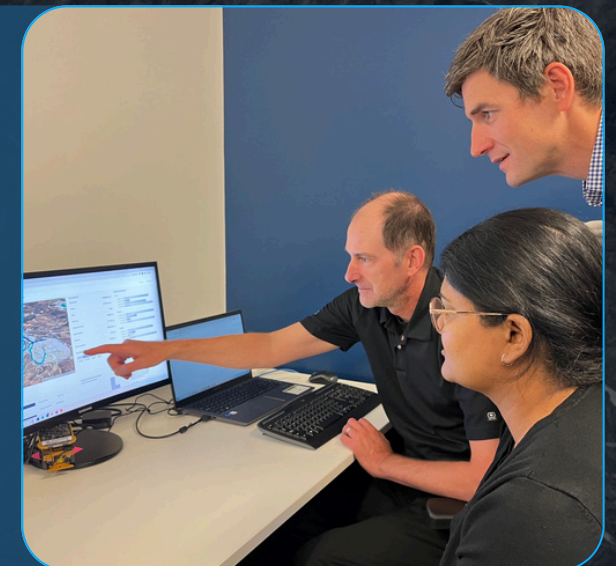
02. Software & Data Science

Cloud-based solutions and expert guidance to help pinpoint and optimize high-value improvement opportunities



03. Consultative Support

Continuous support for both hardware and software to ensure value redemption and return on investment.



Tactical Guidance: Maintenance

01.

Model Training

Haul Cycle data trains models predicting fuel consumption

02.

Model Results

Excessive modelled fuel consumption is flagged for maintenance

03.

Maintenance Intervention

Mine maintenance inspects and services trucks using this intelligence

04.

Impact Calculations

Cascadia models post-inspection to ensure truck efficiency is restored

Issues detected by Cascadia models:



Coal mine saved 481k Liters of Diesel, reduced 837 Tons of CO₂e in 2023

**Additional benefits to production and availability*



Tactical Guidance: Operators

01. **Model Training**
Model includes operator assignment, normalizing operator performance.

02. **Model Results**
Weekly reporting on Operator Ranking deliver to Mine Ops team

03. **Operator Intervention**
Insight guides mine team in executing performance plan.

04. **Impact Calculations**
Post-interventions, monitor operator performance for SOP adherence, benefits

591 Cascadia operator interventions last year reduced diesel consumption by 655k Liters

2023	Number of Interventions	Monthly savings (Gal)
Jan	40	-15,574
Feb	36	-14,066
Mar	55	-24,211
Abr	54	-23,430
May	48	-7,481
Jun	28	-7,016
Jul	33	-20,424
Aug	49	-17,822
Sep	65	-20,981
Oct	77	-1,210
Nov	44	-19,185
Dec	63	-1,818
Total	591	-173,218

-173,218
Gallons Redcued

Tactical Guidance: Road Condition Monitoring

Before

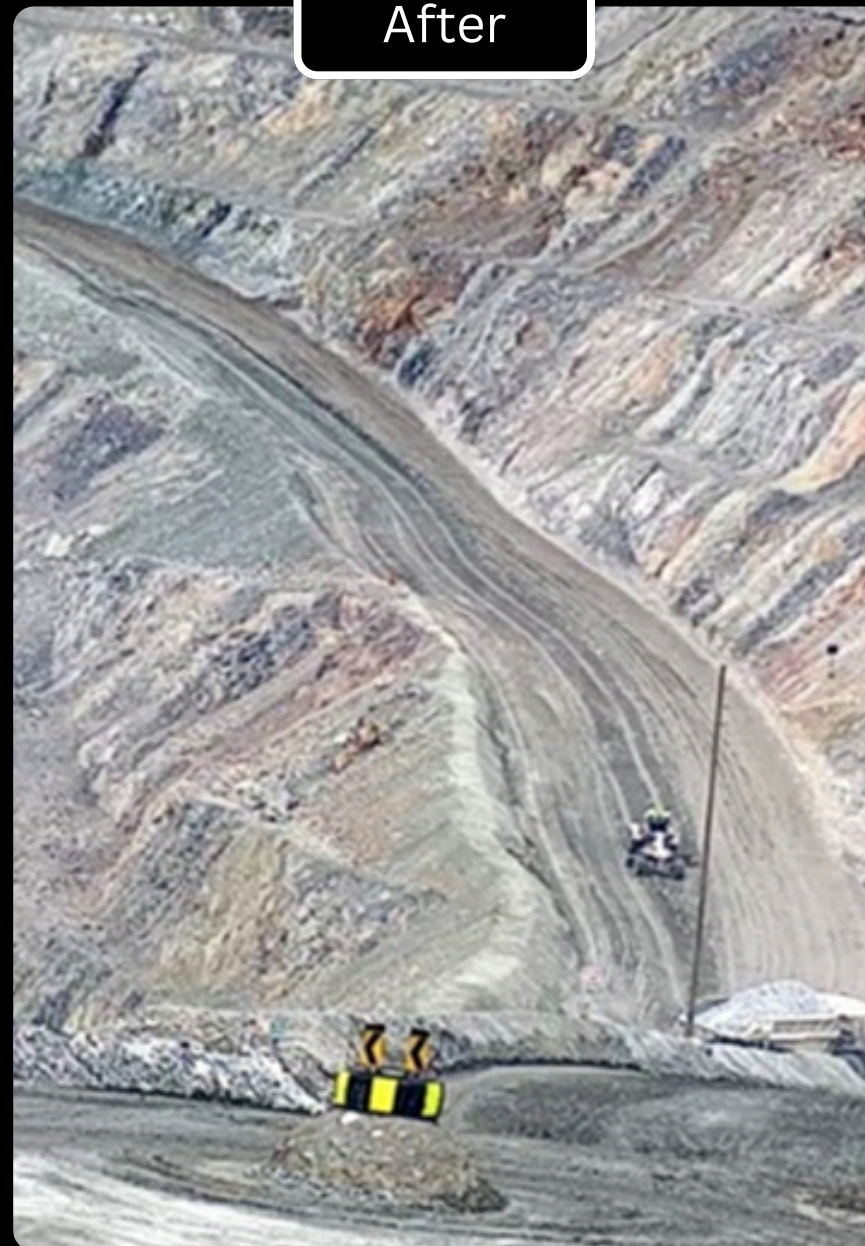


Before



Distance	324.9 m
Time	95.1 sec
Speed	12.3 km/h
Fuel	4.83 gal
Grade	8.3%

After



After



Distance	353.8 m
Time	87.0 sec
Speed	14.6 km/h
Fuel	3.19 gal
Grade	8 %

Copper Mine saved **\$1.8M USD** in 2023 with Cascadia Scientific through fuel intensity heat mapping