



# Maintaining Peak Performance Through COVID-19

MINEX Russia 2020

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Optimising Your Technology

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## About Mine Tech Services (MTS)

- World class specialists who use mining technology to optimise production and cost.
- Recent successes for our clients:
  - Iron Ore Mine - 15% productivity improvement
  - Copper Mine - \$1.47m/year in fuel savings
  - Gold Mine - \$1.7m/month lost production avoidance

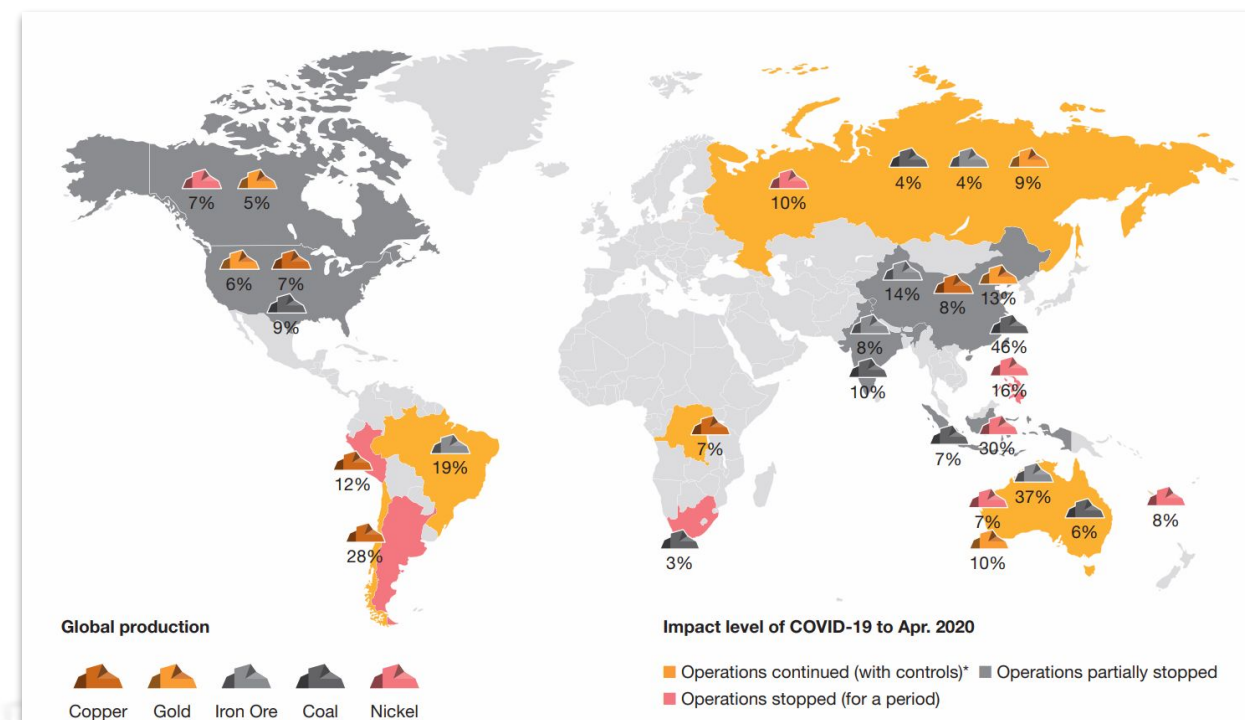


MTS Projects in 2019



## How has COVID-19 Impacted the Mining Industry?

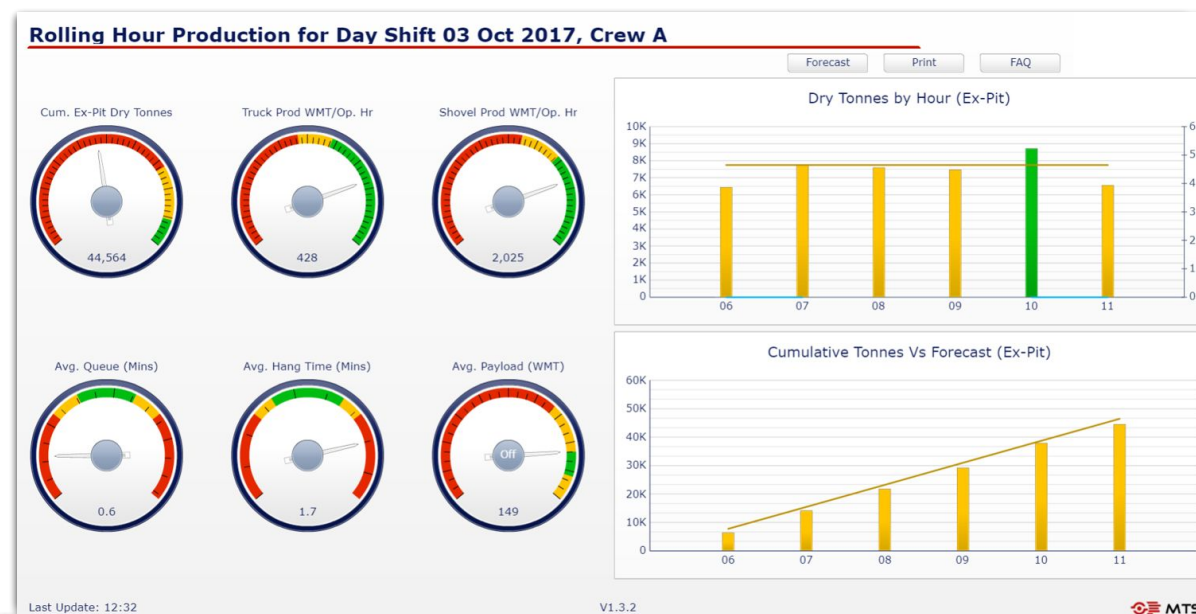
- Many mines have imposed heavy restrictions for site based personnel.
- Some operations onsite staff at < 50%
- Maintaining high quality production is a challenge
- Mines have sped up their digital transformations(!)





## What Can be Done to Maintain Peak Performance?

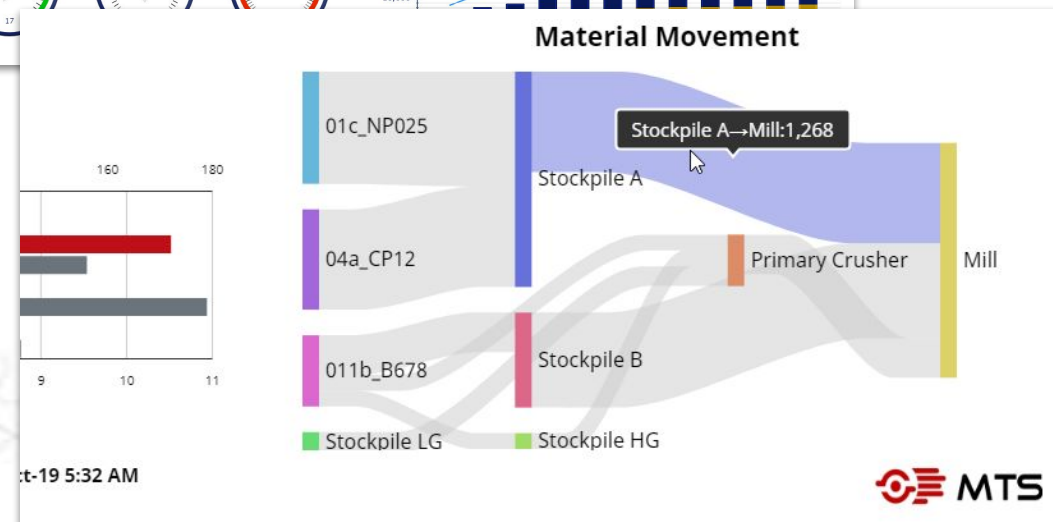
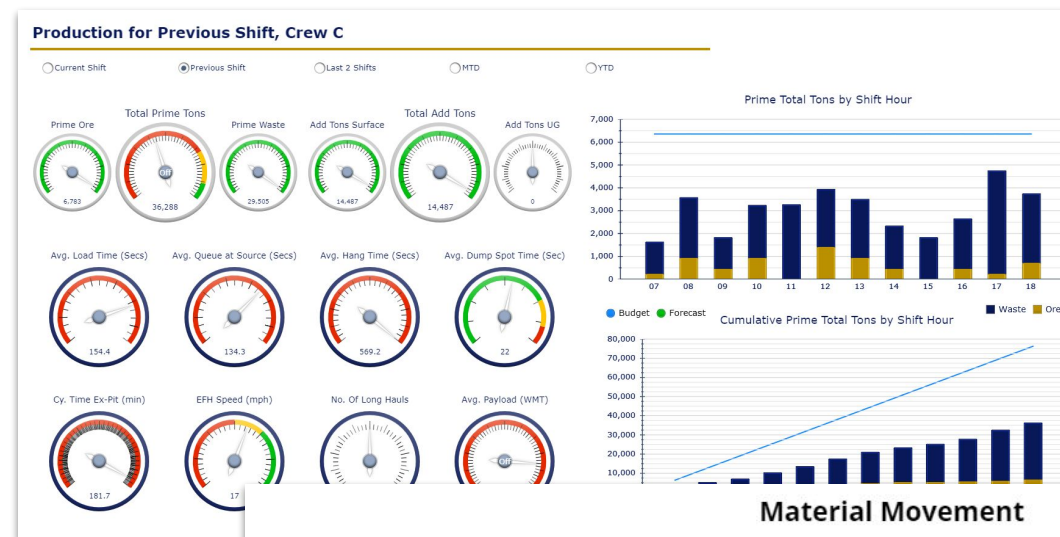
- Arm your teams with tools to work remotely
- Leverage existing investments in technology
  - You may already have the jigsaw pieces
- Identify where gaps exist and prioritise
  - You can't tackle everything at once!
- Connect complementary datasets
- Automate where possible
- Create knowledge from data





## Example: Remote Production Monitoring

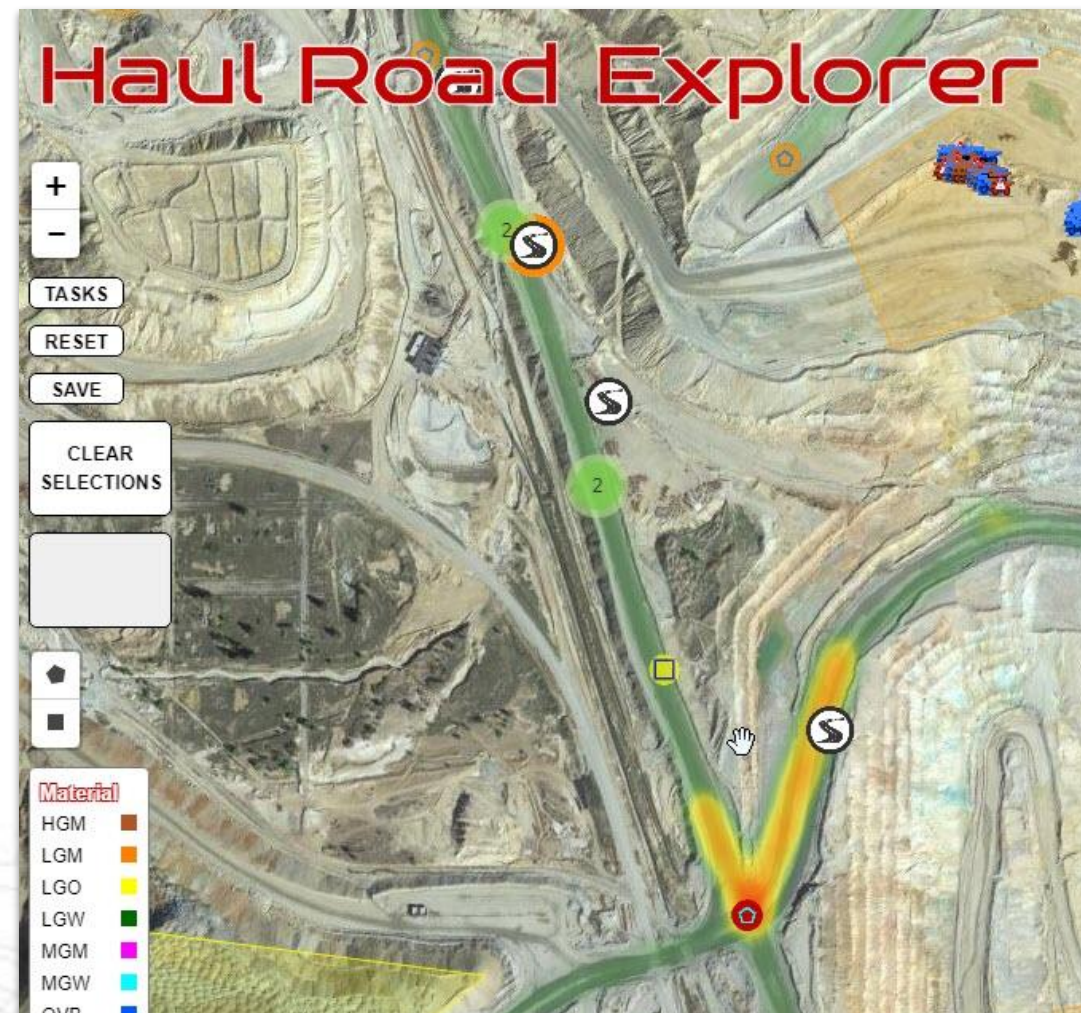
- **Challenge:** Ensuring the mine plan is delivered is hard with less people on site.
- **Solution:** Use data from fleet management systems to:
  - Actively monitor mine plan Vs actual.
  - Ensure accuracy of material flow.
  - Truck and Loading unit productivity
- Intervene as necessary





## Example: Monitoring Haul Road Conditions Remotely

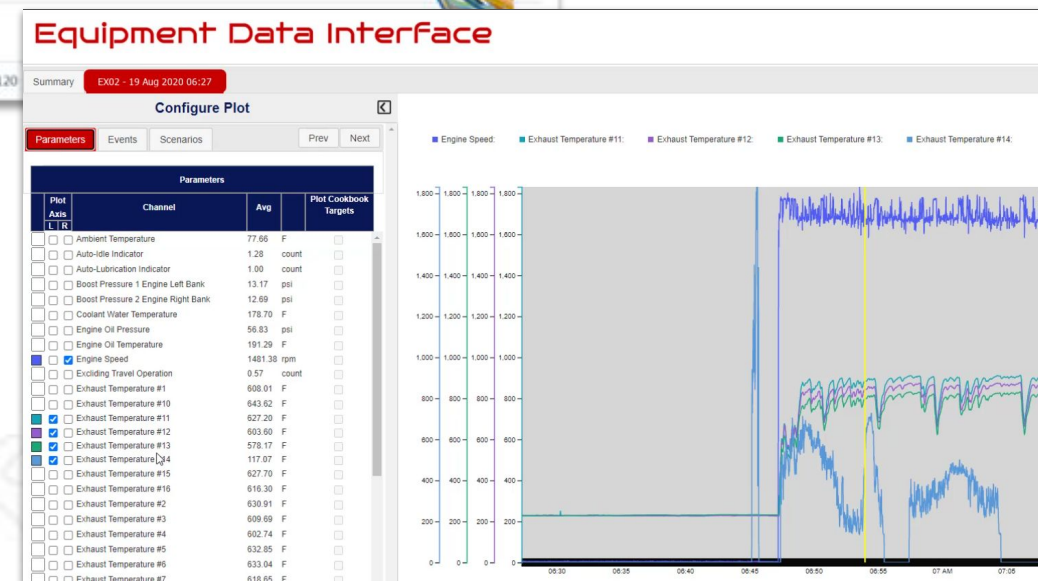
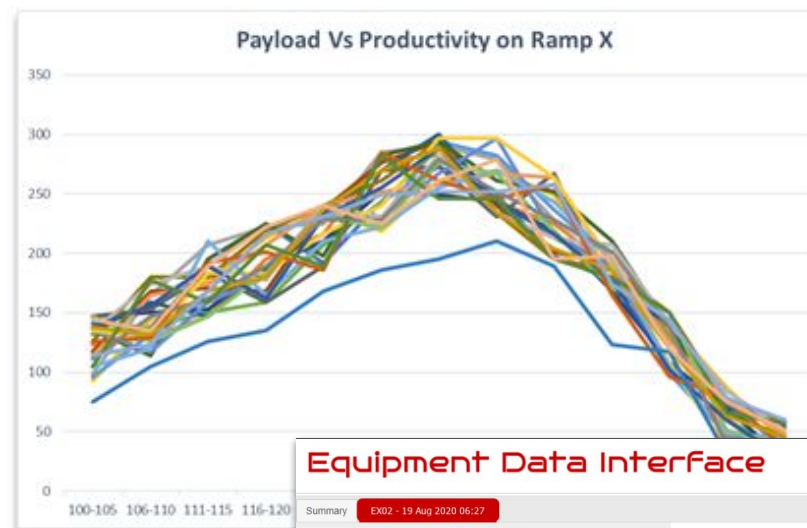
- **Background:** Haulage makes up a significant proportion of a sites costs.
- **Challenge:** With teams off site haul road maintenance/design can easily slip off the agenda.
- **Solution:** Here is an example of how mines can harness their site data to measure, manage....and introduce remote accountability for haul road management.





## Example: Using Advanced Analytics & Big Data for Asset Health

- **Background:** Analysing Asset Health data can help to drive down costs.
- **Challenge:** Completing follow up onboard diagnostics from 1000 km's away!
- **Solution:** Use of previously untapped onboard data can provide much more context around certain alarms - without being onsite and/or stopping assets.
- **Savings:** We've seen >\$1m/month in component savings





## Example: Remote Operator Performance Monitoring

- **Challenge:** With a skeleton management staff it is hard to manage quality & efficiency
- **Solution:** Remote KPI monitoring to measure:
  - Operator performance
  - Abusive behaviour
  - Operator fatigue events

### Truck Operator KPI League Table - Crew A

Report includes all full time operators for 100 tonne and 150 tonne haul trucks for current month

Rank	Operator Name	Total Score out of 100	Safety Score (out of 25)	Production Score (out of 25)	Cycle Quality Score (out of 25)	Training Score (out of 25)
1	Jordyn Ramirez	97.0	22.49	25.27	24.92	24.34
2	Meghan Alvarado	95.0	25.46	23.82	25.97	19.71
3	Cameron English	94.8	20.82	25.89	24.16	23.92
4	Saniyah Figueroa	93.6	21.17	24.43	22.25	25.79
5	Dev Dandel	92.5	24.35	22.74	20.07	24.40

### Operate for Reliability - Surface Trucks







## Closing Comments

- COVID-19 is rapidly speeding up digital transformations
- Mines should take a phased approach to adopting technologies....start with the basics. Don't drown in the data!
- Remote working will lure potentially talented new individuals who were previously put off by the idea of living on a mine site.
- Finally, this will drive autonomous mining even further forwards.



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