



# METS Tech Talk: Harnessing Intelligence

## The Power of Data

Wednesday 17<sup>th</sup> March 2021

# Harnessing Intelligence Series



**2<sup>nd</sup> March 2021 | Leveraging People & Technology**

<https://austmine.com.au/Web/News-Resources/Articles/2021/March/Webinar-Recording--Harnessing-Intelligence-Tech-Talk---Leveraging-People---Technology.aspx>

**17<sup>th</sup> March 2021 | The Power of Data**

**22<sup>nd</sup> April 2021 | Optimising Connectivity**

[https://austmine.com.au/web/Web/Events/Event\\_Display.aspx?EventKey=WEB220421](https://austmine.com.au/web/Web/Events/Event_Display.aspx?EventKey=WEB220421)

**18<sup>th</sup> May 2021 | A Zero Impact Future**

[https://austmine.com.au/web/Web/Events/Event\\_Display.aspx?EventKey=WEB180421](https://austmine.com.au/web/Web/Events/Event_Display.aspx?EventKey=WEB180421)



# Today's Speakers



## Improving Productivity & Safety for the Underground Mine

*Haydn Roberts, CEO, MST Global*

## Resilient Capital Performance Through Integrated Data

*Paul Northcote, Head of Nostra, Denver*

## Improving the Resource Sectors Efficiency and Transparency Using Blockchain

*Rose McDonald, Co-CEO, Nansen*

*Andrew Collins, Co-CEO, Nansen*

## Data Ownership

*Daniel Poller, CEO, Auto-mate*

## Integrated Data Management for Increasing Supply Chain Productivity

*Matthew Whyatt, Partner Development Manager, Intov8*

## Unlocking the Power of Technical Data for Domain Modelling

*Steve Sullivan, Domain MCF Technical Lead, Maptek*



Denver



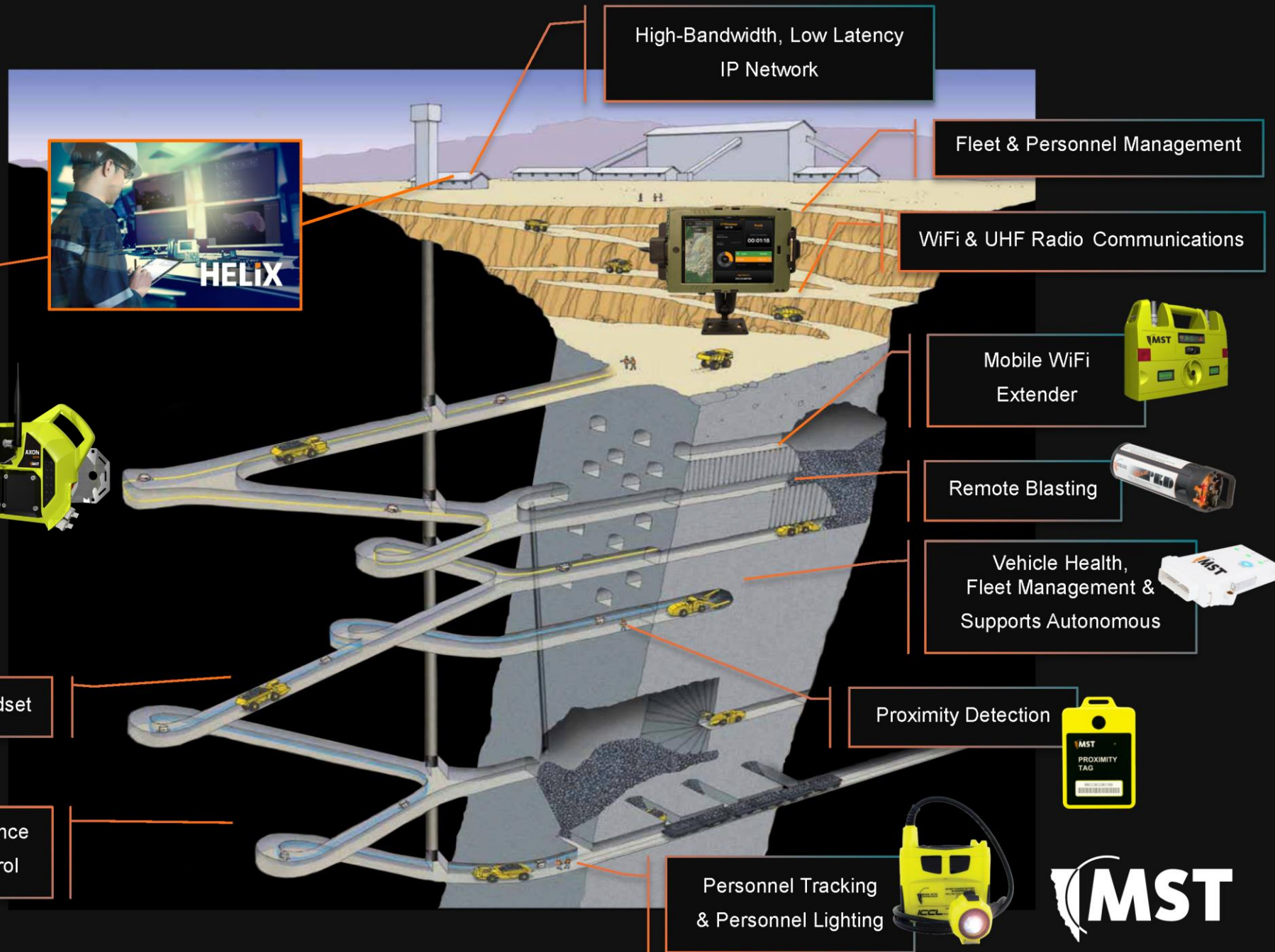
auto-mate



# “The Power Of Data”

What happens to data;  
if you don't have GPS, power and connectivity in an  
underground mine?”

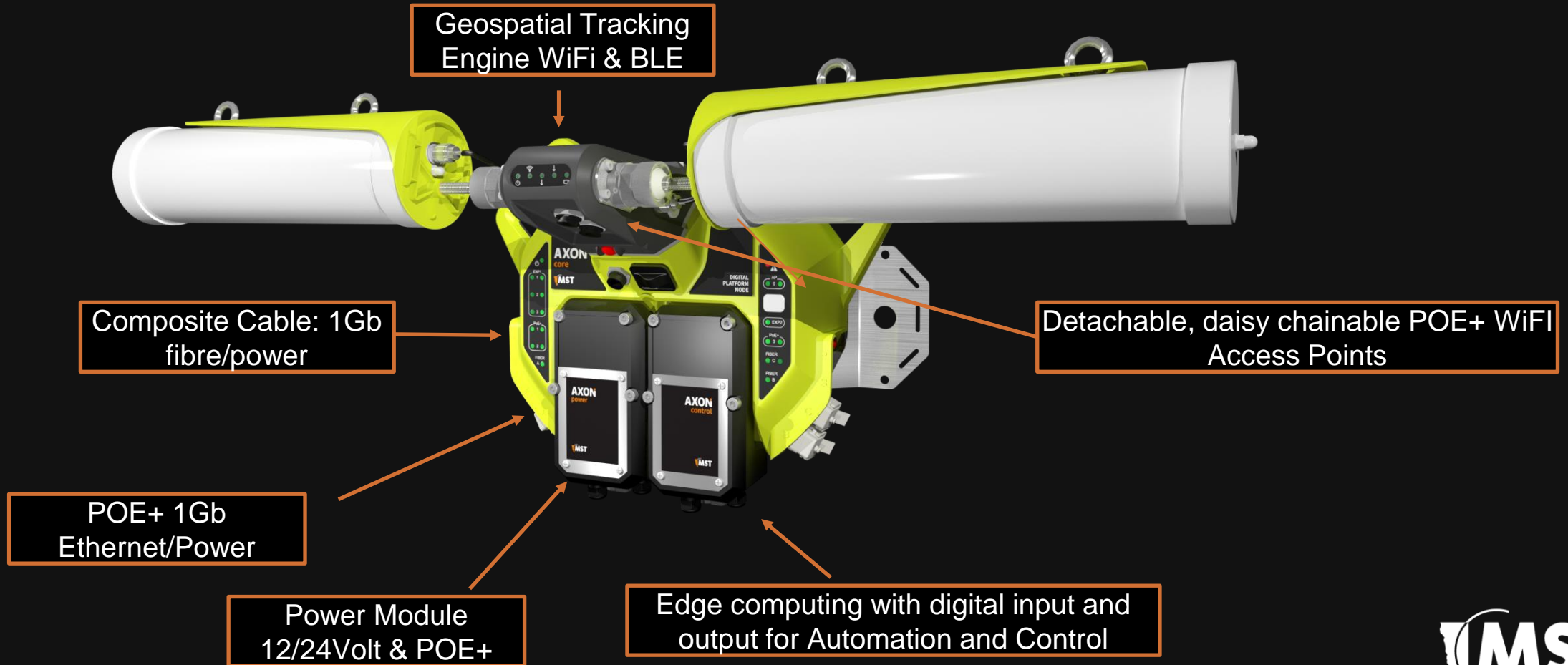
# MST Digital Ecosystem & Software Solutions



- 3D Visualisation & Tracking
- Telemetry
- Voice & Messaging
- Automation & Control
- Personnel & Asset Management

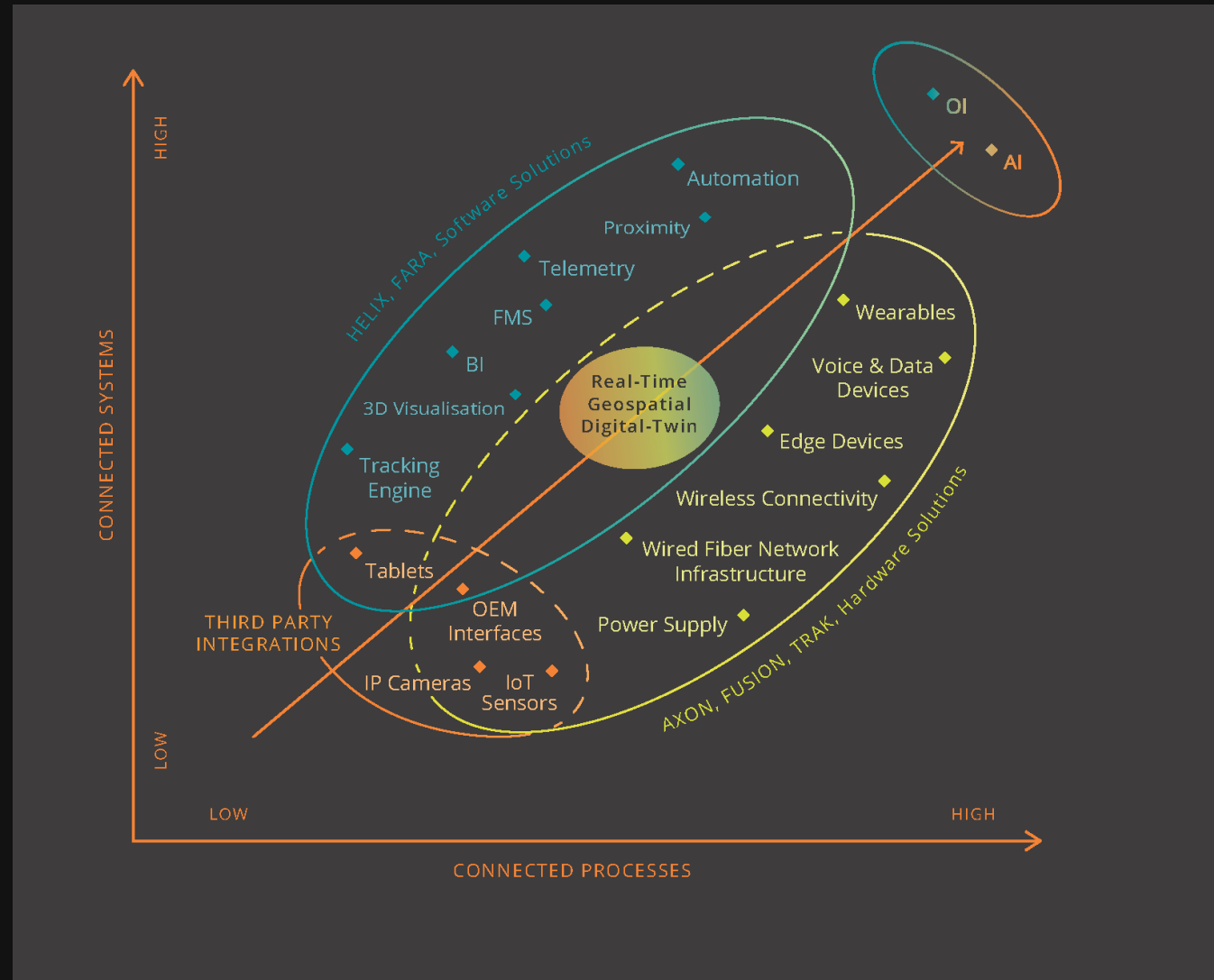


You design and offer a smart, integrated digital ecosystem that comes alive with software enabled solutions and grows with new technologies and the customer's journey.



# Geospatial Data powering Artificial Intelligence in Real-Time

MST's Digital Vision Trackable data captured in real-time from sensors, devices and wearable that is fed into a high-bandwidth, low latency pipe to the cloud that allows Artificial Intelligence & Domain Experts to teach edge devices to be Operationally Intelligent back at the mine.



**Thank you**

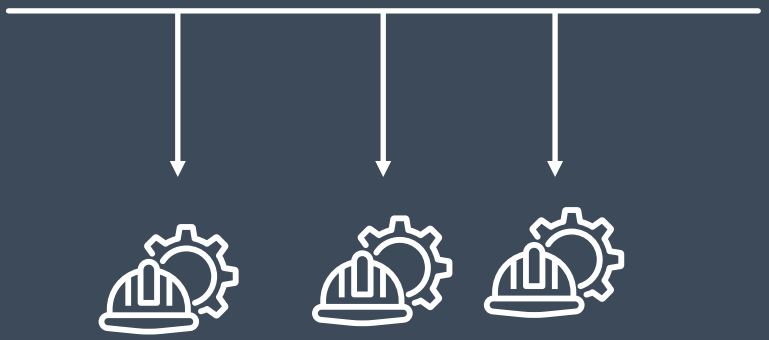






# Resilient capital performance through integrated data

Paul Northcote | Head of Nostra


# the challenges




  
No real time, trusted project portfolio view


  
Manual funding processes

  
Lack of project prioritisation to business objectives

  
Silos of project data.

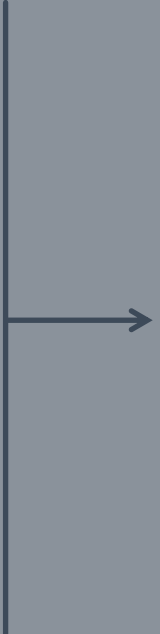
  
Lack of change management leading to project disruption costs

  
No transparency or predictability in financial performance; costly decisions

  
Limited stakeholder engagement

  
Limited understanding of project quality & risks

# the solution



**Trusted portfolio view & dashboarding**

**Integrated forecasting**

**Digitised workflows and approvals**

**Seamless integration; data integrity**

**Digitised project delivery framework**

# BP Downstream Benefits

**5%**

reduction on capital project costs

**10%**

reduction in budgeting variability

**98%**

forecasting accuracy

**6-12 mths**

ROI

“

I have no idea how you would manage your projects portfolio if you didn't have Nostra in place.

”

Head of Projects, Bp Downstream



# Contact

Paul Northcote

Head of Nostra

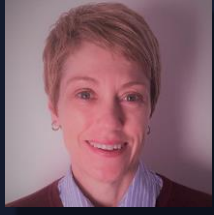
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nansen

Rose MacDonald & Andrew Collins  
rose@nansen.io | andrew@nansen.io

# About



Co-Found and director of Nansen.io. Following a 19-year career in law enforcement, across two Australian jurisdictions, Rose took up a position with the Australian Public Service before co-founding Nansen.io a company focused on the development and use of emerging technologies to overcome some of our biggest global challenges.



Co-Founder and director of Nansen.io. Prior to Nansen, Andrew was a CIO, CSO and CTO in a variety of Federal Government departments and commercial enterprises in Australia and New Zealand and has led a variety of organization wide cloud migrations and digital transformations.

Nansen.io (Nansen) was established in Australia in 2019 by a small group of technology leaders who were determined to leverage emerging technologies to improve peoples' lives. Our think big, contemporary attitude ensures we look beyond traditional models to generate creative, sustainable and effective solutions that solve both existing and emerging global problems.

For organisations, Nansen provides a private blockchain solution that enables organisations to cost effectively integrate immutable blockchain storage into their existing IT services and workflows; providing the benefits of blockchain without the risk of large scale system deployment.

# Blockchain

Blockchain allows transactions to occur with integrity and confidence, while not requiring personal knowledge or trust of the other party. Blockchain achieves this because it manages the trust within the system making third party trust models redundant.

Blockchain and a related technology called SmartContracts, allows for a transactions between two parties that do not implicitly know or trust one another, to occur without the representation of a third party escrow service. The system provides the required assurances for a transaction to take place. Blockchain achieves this by only allowing transactions to occur, by validating that the parties involved actually have the assets they are transferring and using technical controls to ensure that a transactions cannot be 'reversed' or altered at a later date.





# Opportunity in the Resources Sector

## Compliance & Transparency

Engineering, construction and handover of mining sites and their operation. Makes transactions traceable during the complex process of managing compliance with regulations, social trust and workplace compliance.

## Mining Supply Chain

OECD Due Diligence Guidance around the ethical sourcing of minerals is driving the adoption of blockchain solutions to trace mineral supply from its origin to avoid human rights and conflict abuses. Ford and Volkswagen are leaders in this field.

## Efficiency

Tracking of vehicles, automated preventative maintenance to avoid downtime and unnecessary replacements.

## Provenance

Providing end users with clear and accessible information on the source and supply route raw materials have followed to reach them. Unique code tracking of diamonds and digital tokens for Cobalt mining are examples.

## Ethical and Sustainable Mining

Unfortunately there are unethical miners out there, blockchain provides a way of monitoring compliance and workforce behaviour to ensure leases are only awarded to those who operate within the law.

## Cross-Border Efficiency

Cross border funds transfers are notoriously inefficient and governance rules vary dramatically between countries. Blockchain provides a mechanism to manage all global operations in the parent companies regulatory framework.

## Reserves Management

Company value is often tied to the reserves estimate. Blockchain provides for transparent management and reporting of reserves reporting to shareholders and the ASX.

## New Approaches to Mining

Concepts such as 'Green Gold' where resources are left in the ground but traded on exchanges requires a solution such as blockchain that is immutable to minimise fraud risks.



nansen

Rose MacDonald & Andrew Collins  
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## Austmine METS Tech Talk: The Power of Data

# DATA OWNERSHIP

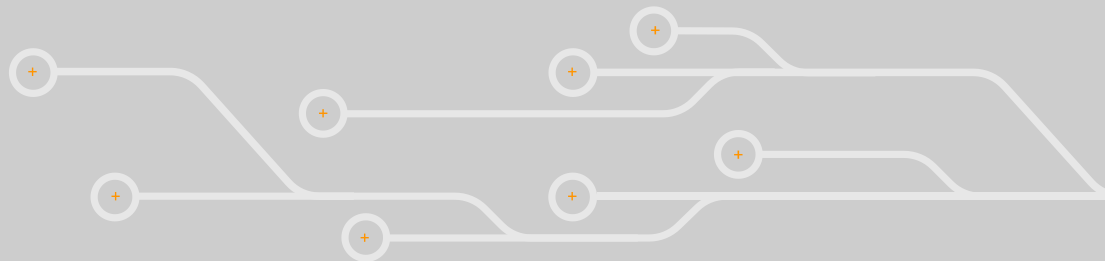
Discussion Document  
March 2021

February 2021

**auto-mate**  
mining automation on **your** terms

# DATA SITUATION TODAY

- Autonomous mining systems generate a huge amount of data continuously.
- There is currently no standard as far as where the data is stored. It could be with the miner or with the autonomous solution provider
- Often the data is stored in a proprietary format only readable by the autonomous solution provider
- The mining company engineers, analysts and operational staff are often unaware of who owns the data, how to navigate the databases and how to extract the data.



# WHY THIS MATTERS

The data generated provides important insights to optimising the operation and increasing safety

- If you knew where multiple trucks were experiencing wheelslip events, and knew that these events were preceded by a watercart being used in the same area, could this be used to optimise watering practice?
- If you knew where your vehicles were slowing down, could this be used to optimise road width and junction design?
- If you knew where your autonomous trucks were frequently having to course correct, could this be used to automatically identify areas of poor ground conditions?
- If you had access to your autonomous trucks' LiDAR data, could you automatically establish that your windrows and roads were compliant with your mine design?

Most mining companies likely own the data however are not able to properly access and utilise the data. The mining companies should expect and require simple and easy access!

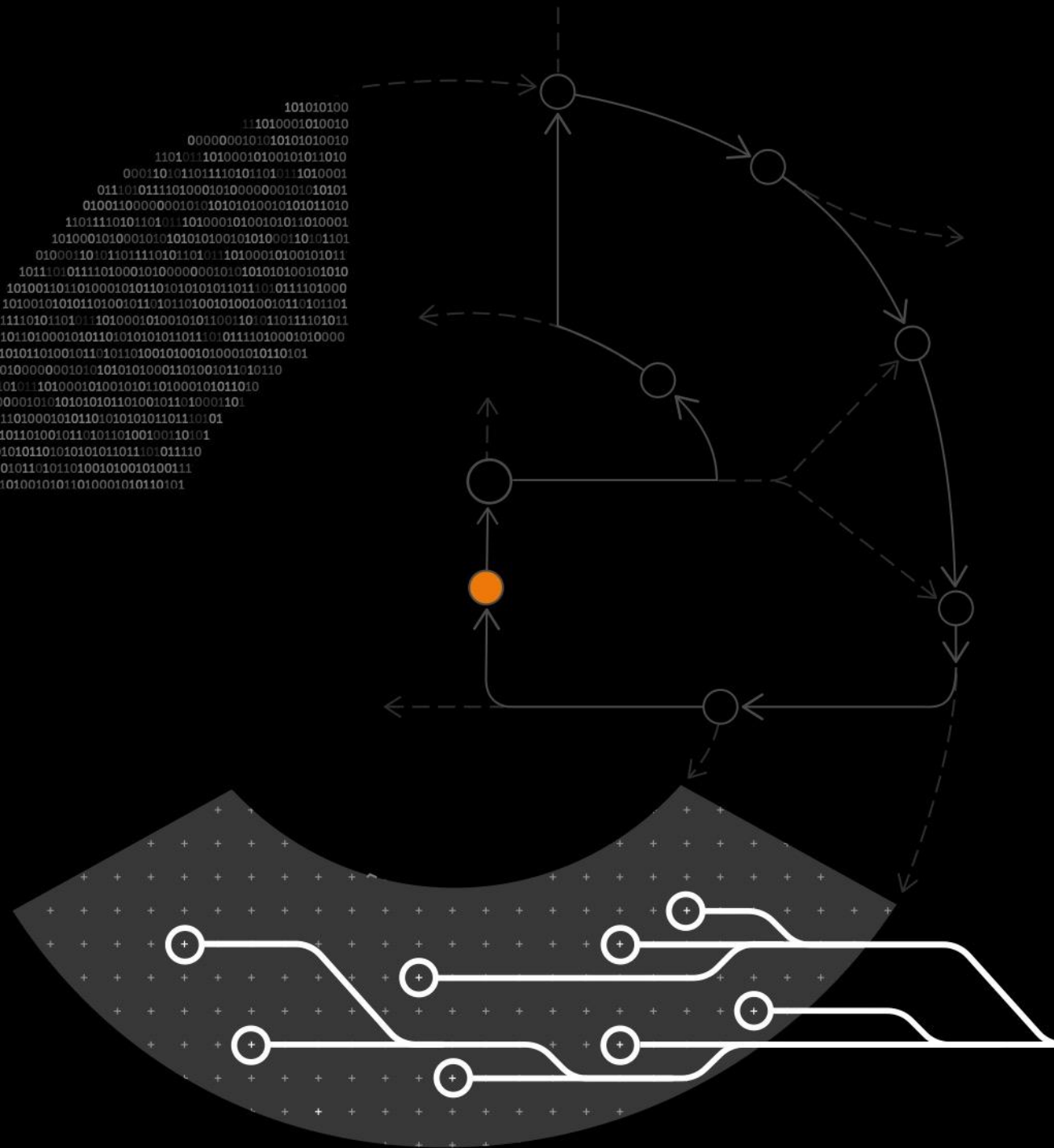
# AUTO-MATE

Auto-mate is a smart automation technology provider.

We enable accessibility to autonomy for all mining operations, globally.

## The Auto-mate difference

- We **automate your existing heavy mobile equipment** regardless of make, age or model, to your required level of automation. We negate the need for new assets and the associated high capital costs.
- The **data generated from the assets belongs to you**. Your data can then be used for process and operational improvements.
- We work with you to determine your unique needs and the appropriate level of automation for your operation, **we provide automation on your terms**.
- There is no need to replace current systems - the **open architecture of our technology solutions allows interoperability** with existing systems and mixed fleets.



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# DISCUSSION

Mining automation  
on *your* terms

[www.auto-mate.net](http://www.auto-mate.net)



Intov8's POLR Suite transforms the way you manage your data.

# THE POWER OF DATA

So, what's next?



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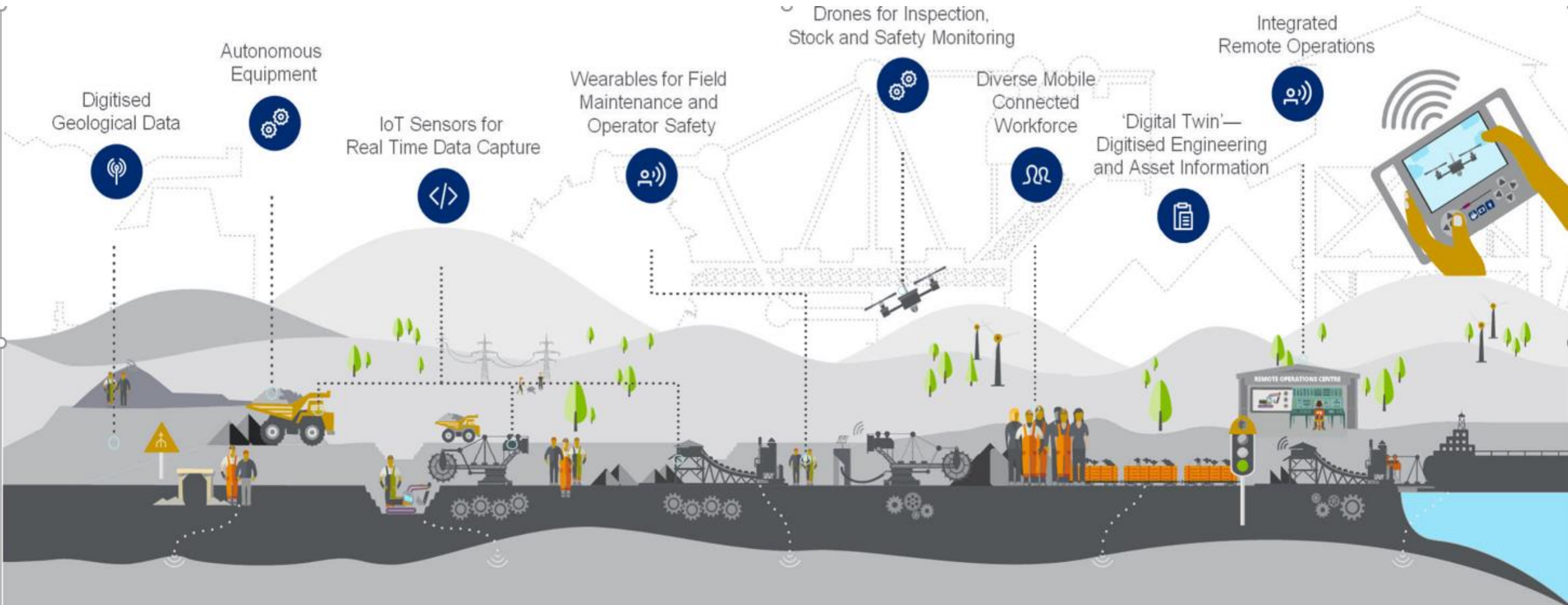
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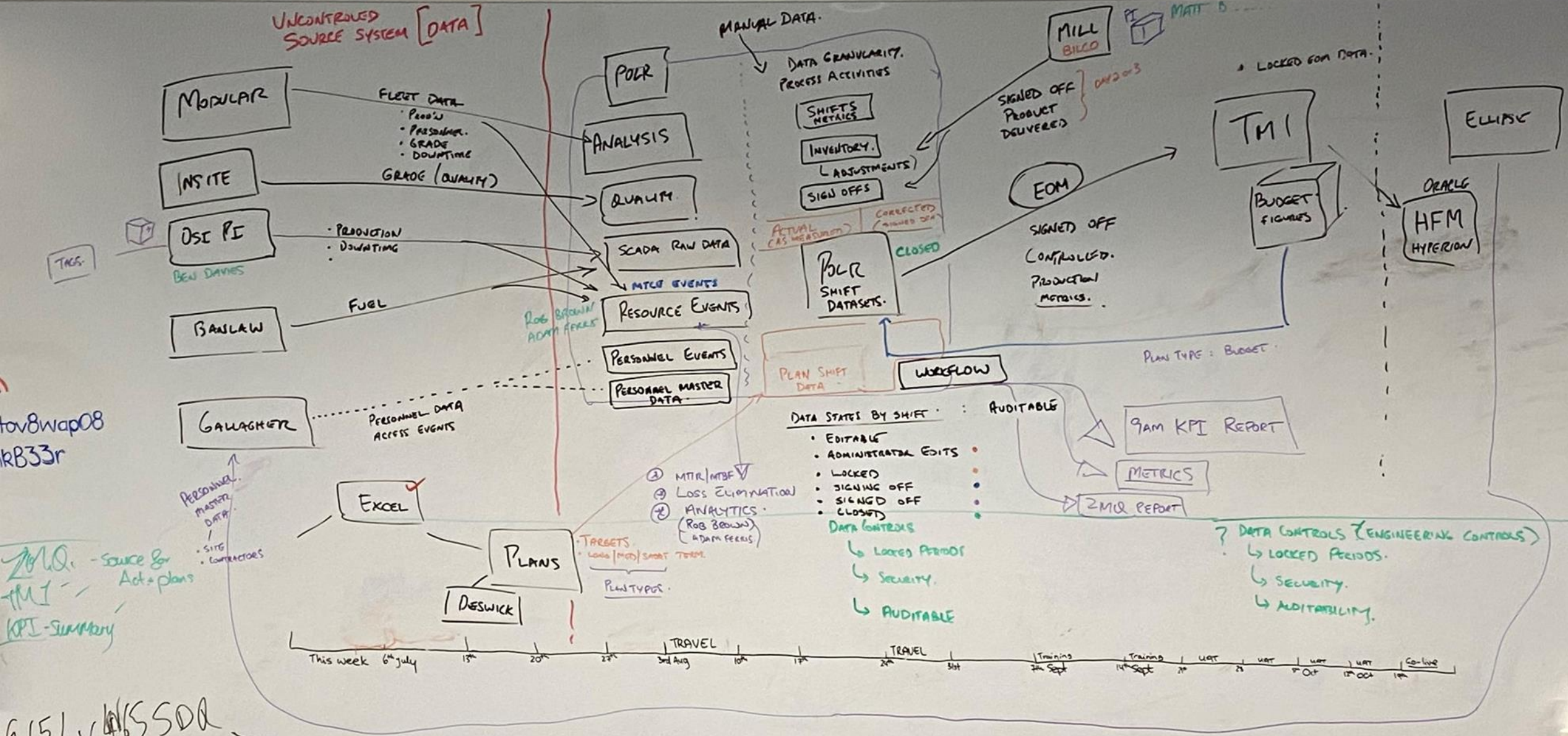


# Intov8's POLR Suite transforms the way you manage your data.

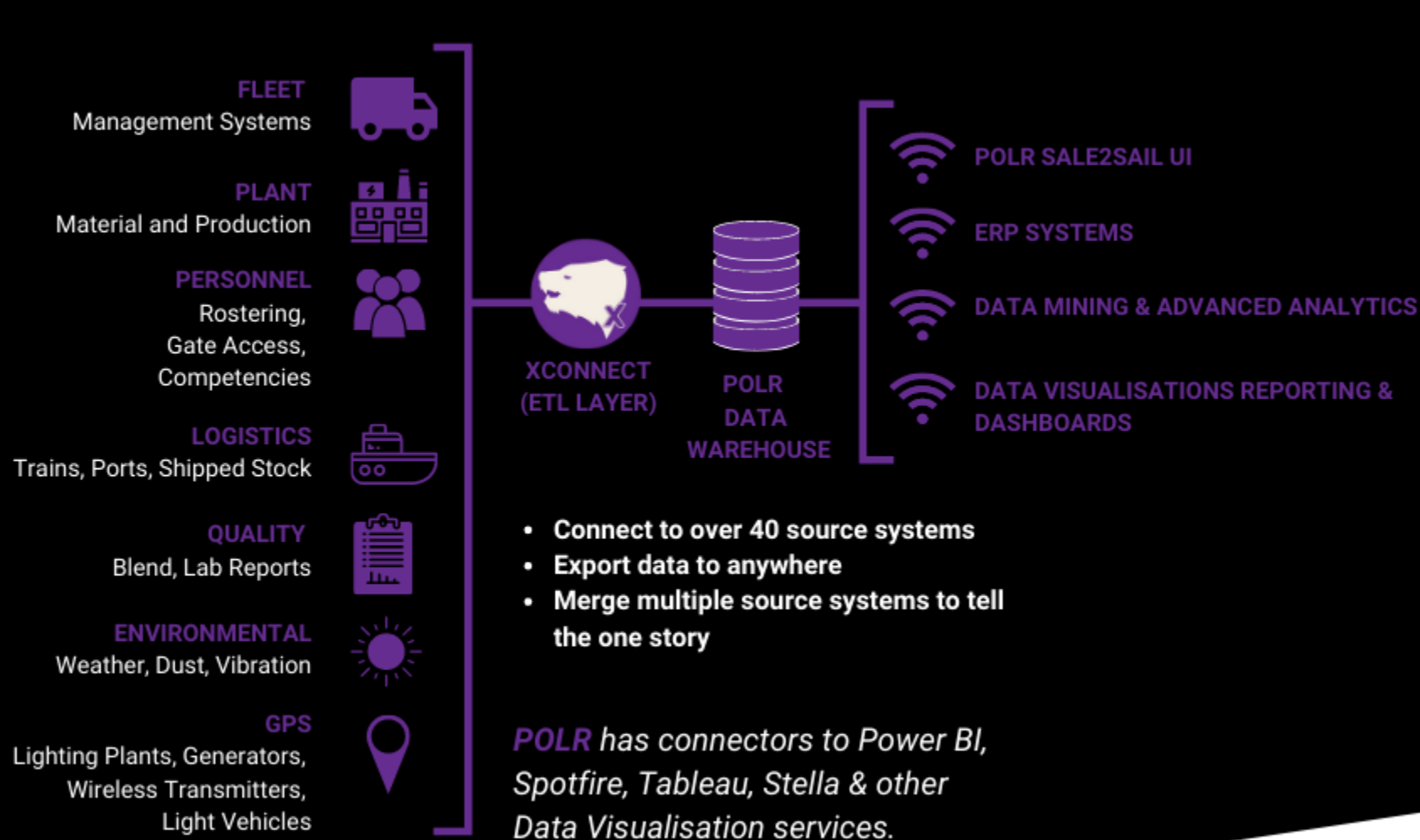
POLR Sale2Sail | POLR Organiser | POLR Goods Tracking | POLR Resource Events | POLR Workflow | POLR xConnect



# ACTUAL MINE DATA FLOW



# Data Visibility at Scale



- Connect to over 40 source systems
- Export data anywhere
- Merge multiple source systems to tell the one story
- Multi-site - single instance

# Intov8 have solved the problem of Interoperability for more than a decade

The only Single instance Multi-Site Production Reporting, Inventory Accounting and Performance Management system on the market.

So, What's the real power of this data?



# Productivity in mining: now comes the hard part

A global survey

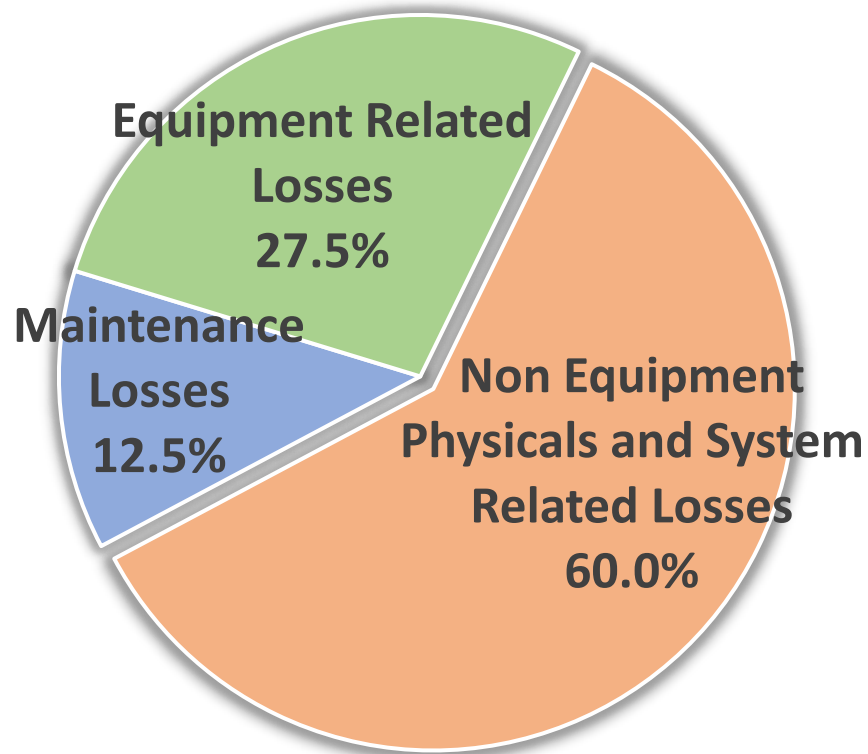
- ▶ **Using technology and data to enhance integration**

Technology can break down silos and enable new working practices to evolve. Only with good data can companies understand what good performance looks like, and companies that successfully use data outperform their peers by 20%.<sup>3</sup>

We turn data in to  
Information and  
Information in to  
Insights



# Insights



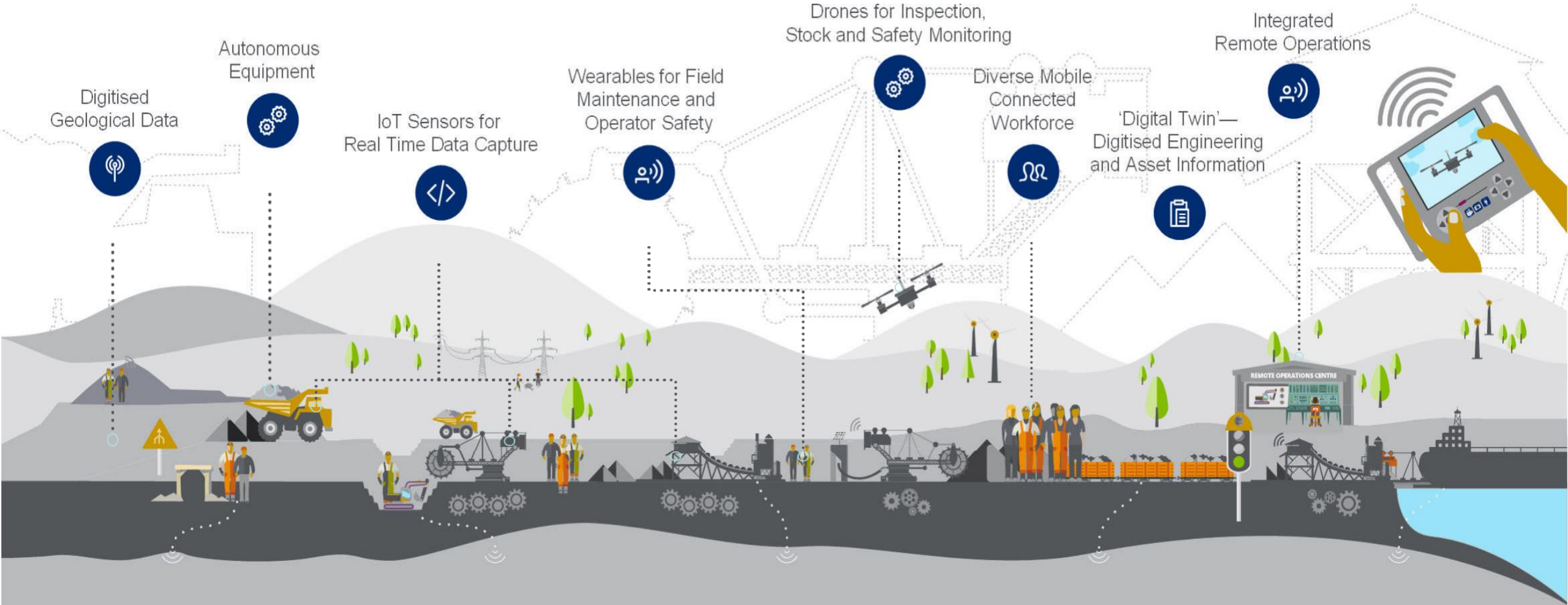
In Partnership with C4 Strategy we have crossed the chasm and identified the largest opportunity for mining companies and the only real reason to develop a business wide single version of the truth

*C4Strategy*

Utilising the Data from POLR we've been able to optimise the value derived from existing assets to the value of \$120 million for a coal mining client – Mark Stocks – C4 Strategy



# The rise of data, the need for connection, information, insights and aligned action: \$350Bn global opportunity being revealed -McKinsey



\$350Bn in value destroyed; value leakage, or opportunity not captured





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Intov8's POLR Suite transforms the way you manage your data.

POLR Sale2Sail | POLR Organiser | POLR Goods Tracking | POLR Resource Events | POLR Workflow | POLR xConnect

# What's your business case?

Intov8 and C4Strategy have developed a unique site and business audit to determine the value that can be derived from an implementation.

Contact us today.

Matthew Whyatt  
Partner Development manager  
0405 177 542  
Matthew.Whyatt@intov8.com.au



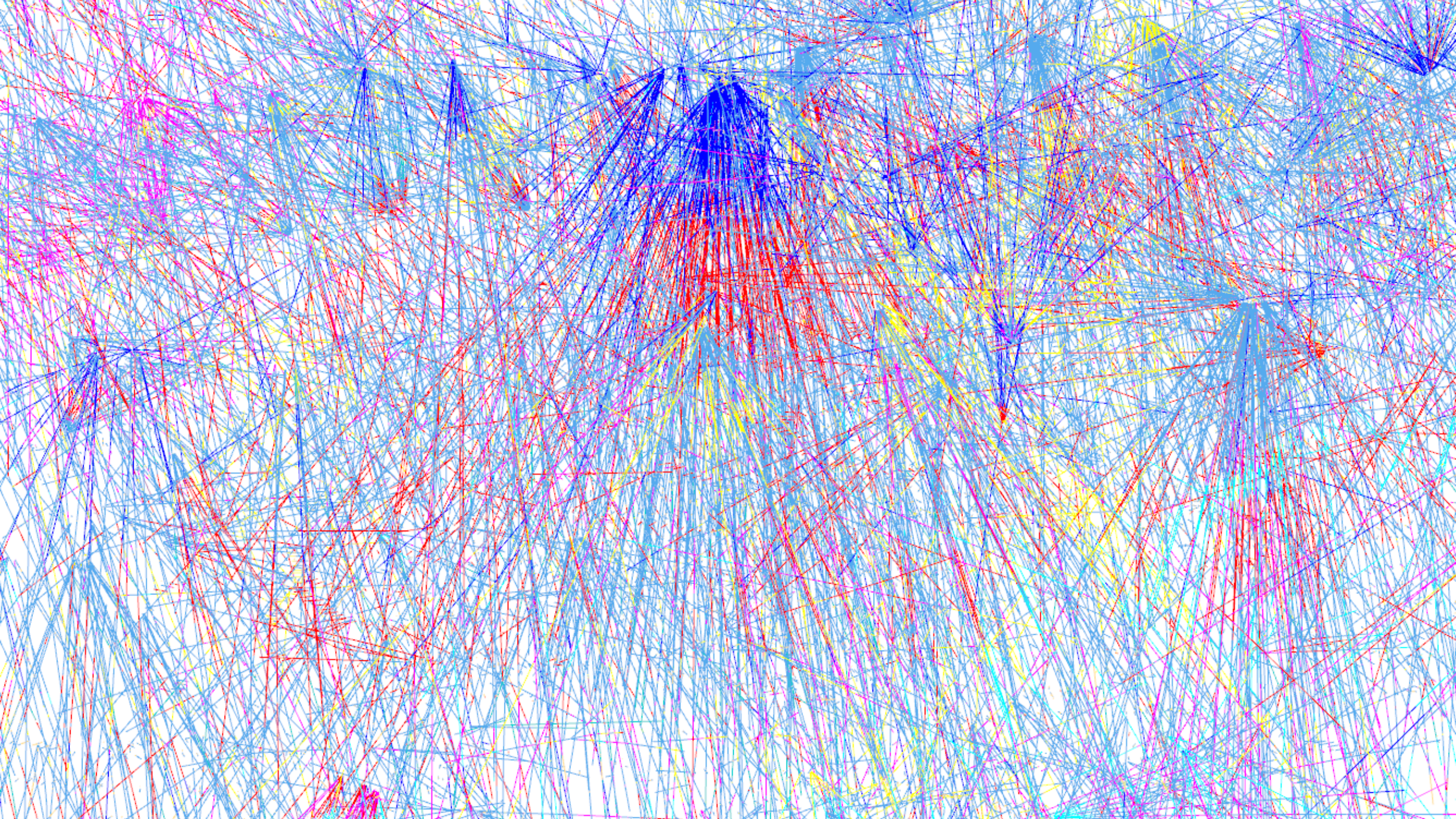


## Unlocking the power of data for domain modelling

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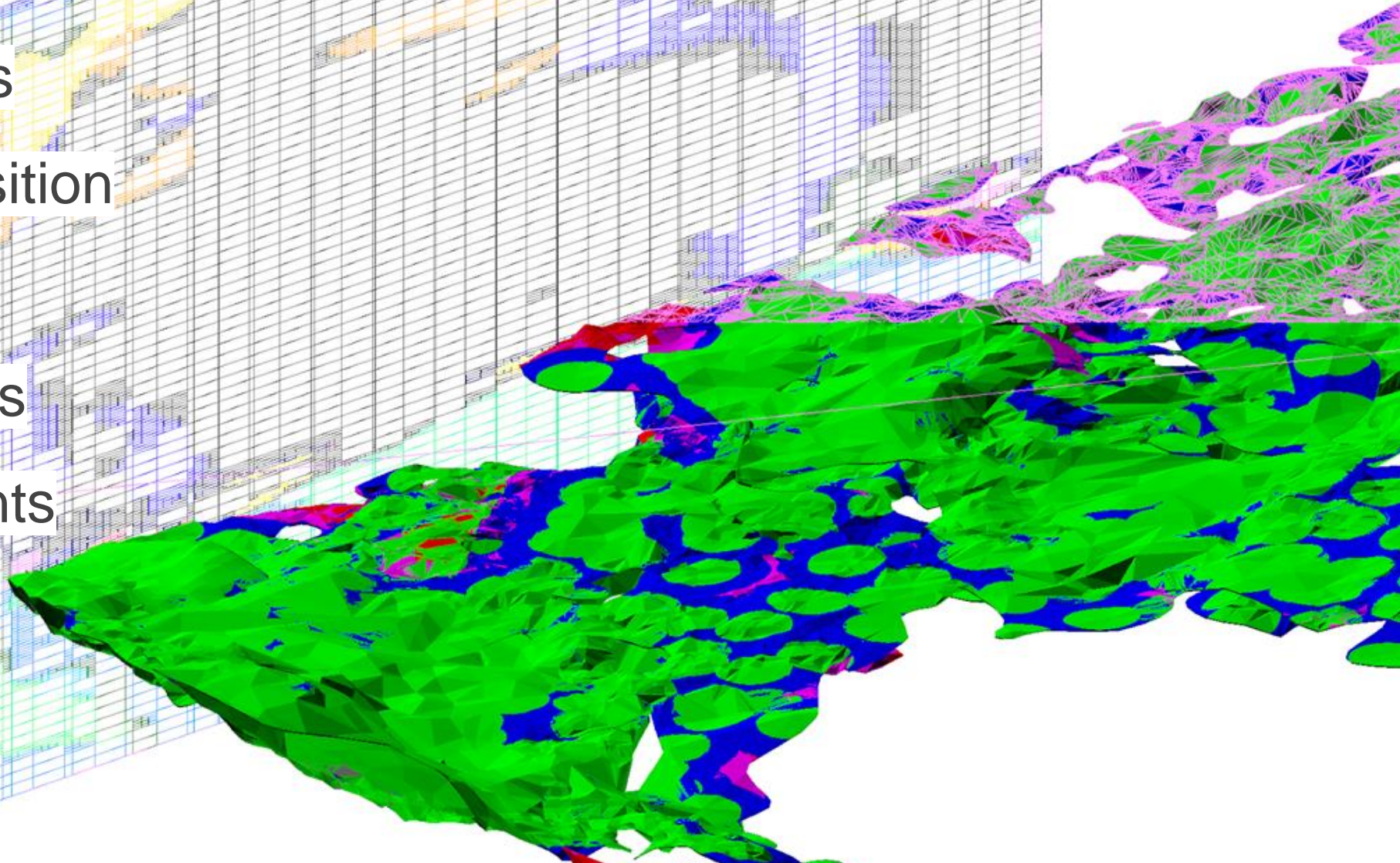


**Steve Sullivan**  
*Technical Lead*  
*DomainMCF*



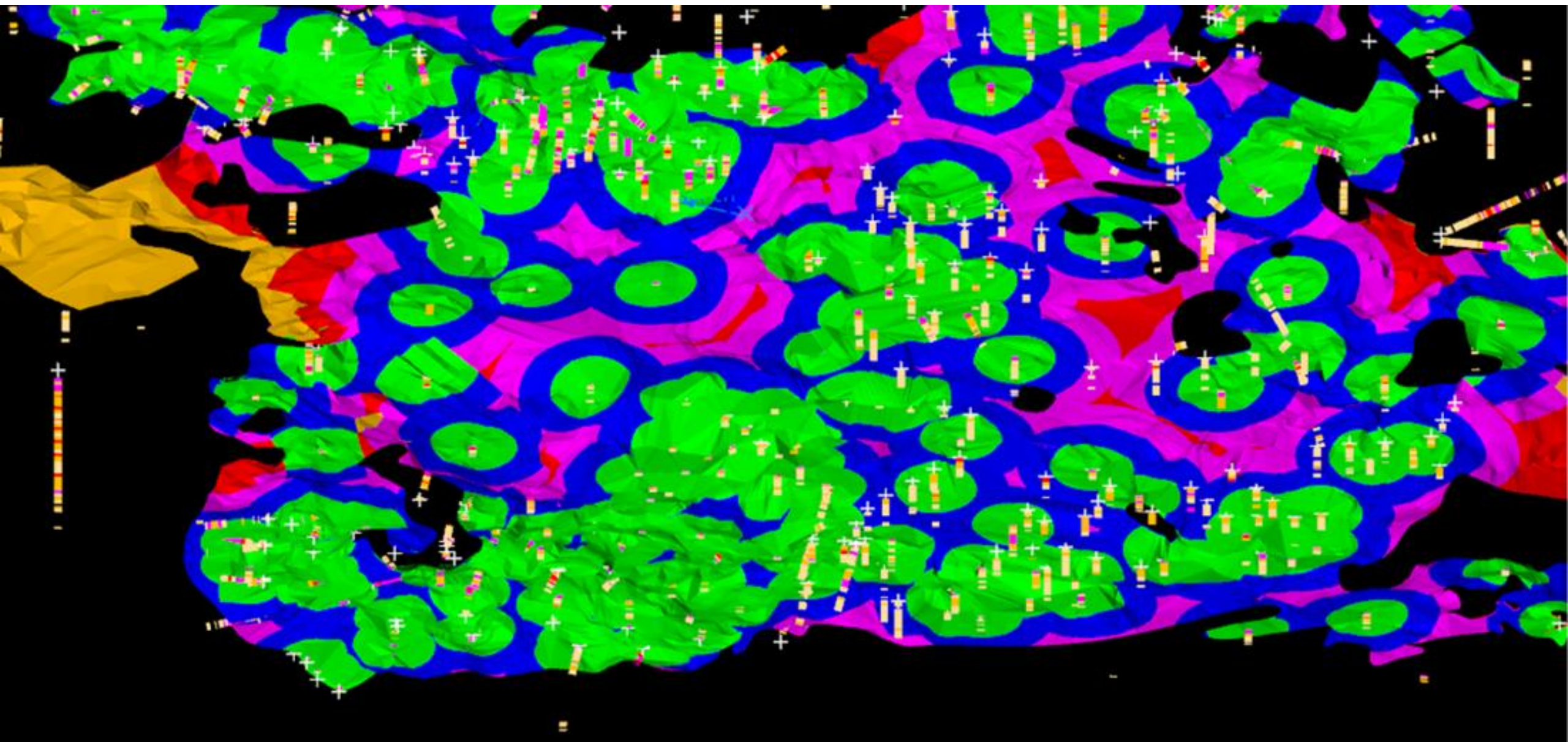
# Data challenge

- > Data diversity
- > Structural controls
- > Chemical composition
- > Data volumes
- > Process workflows
- > External constraints



In a recently reported case,  
resource overestimation resulted in a  
\$140 million loss of value to shareholders.

# Transformational machine learning



## Democratisation of data

- > Digitalisation is the pathway to the democratisation of data
- > Data validation and interpretation regimes can help overcome personal bias
- > A data-driven culture embraces systems which are robust, repeatable and user-independent



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# Questions



# Harnessing Intelligence Part 3



## Optimising Connectivity

Date: Thursday 22<sup>nd</sup> April

Time: 12:30pm – 1:15pm AEDT | 9:30am – 10:15am AWST



D A M S T R A

HARDHAT<sup>®</sup>



HEXAGON

tait  
communications

VOCUS

# Events



**18<sup>th</sup> March, Sydney:** Site Tour at Nepean Engineering & Innovation

**23<sup>rd</sup> March, Newcastle:** Supply Chain Innovation Panel (Komatsu, Ampcontrol & Quarry Mining)

**24<sup>th</sup> March, Perth:** Understanding Indonesia – Opportunities for WA METS

**25<sup>th</sup> March, Brisbane:** Smart Mining Networking Event - Andrew Wilson, Head of Digital Teams, BHP

**25<sup>th</sup> March, Geelong:** Victoria METS Export Hub Networking Event

**30<sup>th</sup> March, Melbourne:** CEO Leadership Luncheon – Mark Saxon, CEO & President, Medallion Resources

**31<sup>st</sup> March, Adelaide:** CEO Leadership Luncheon – Trent Wehr, Managing Director, Mining, Liebherr

**29<sup>th</sup> April, Melbourne:** Smart Mining Networking Event – Michael Hudson, Chairman & CEO, Mawson Gold

Visit [www.austmine.com.au/Events](http://www.austmine.com.au/Events) for more information

# Austmine 2021: Harnessing Intelligence



**Johann Reps**  
Global Technology  
Manager  
Alcoa



**Matthew Holcz**  
Managing Director,  
Pilbara Mines  
Rio Tinto



**Amanda Lacaze**  
Managing Director  
Lynas Corporation



**Rob Grant**  
Director Energy  
FMG



**Steven Coughlan**  
Executive Chairman  
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