



Digital Terrain Overview

January 2023



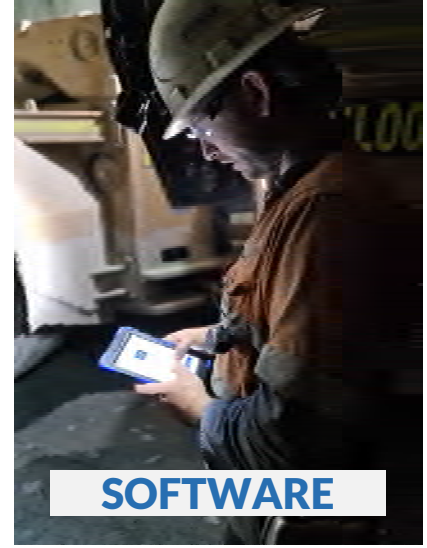
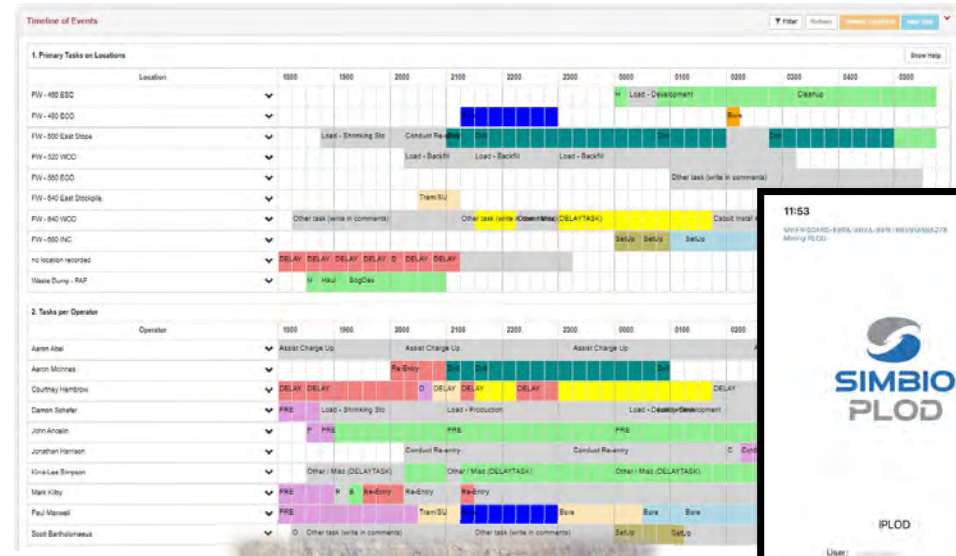
Who we are



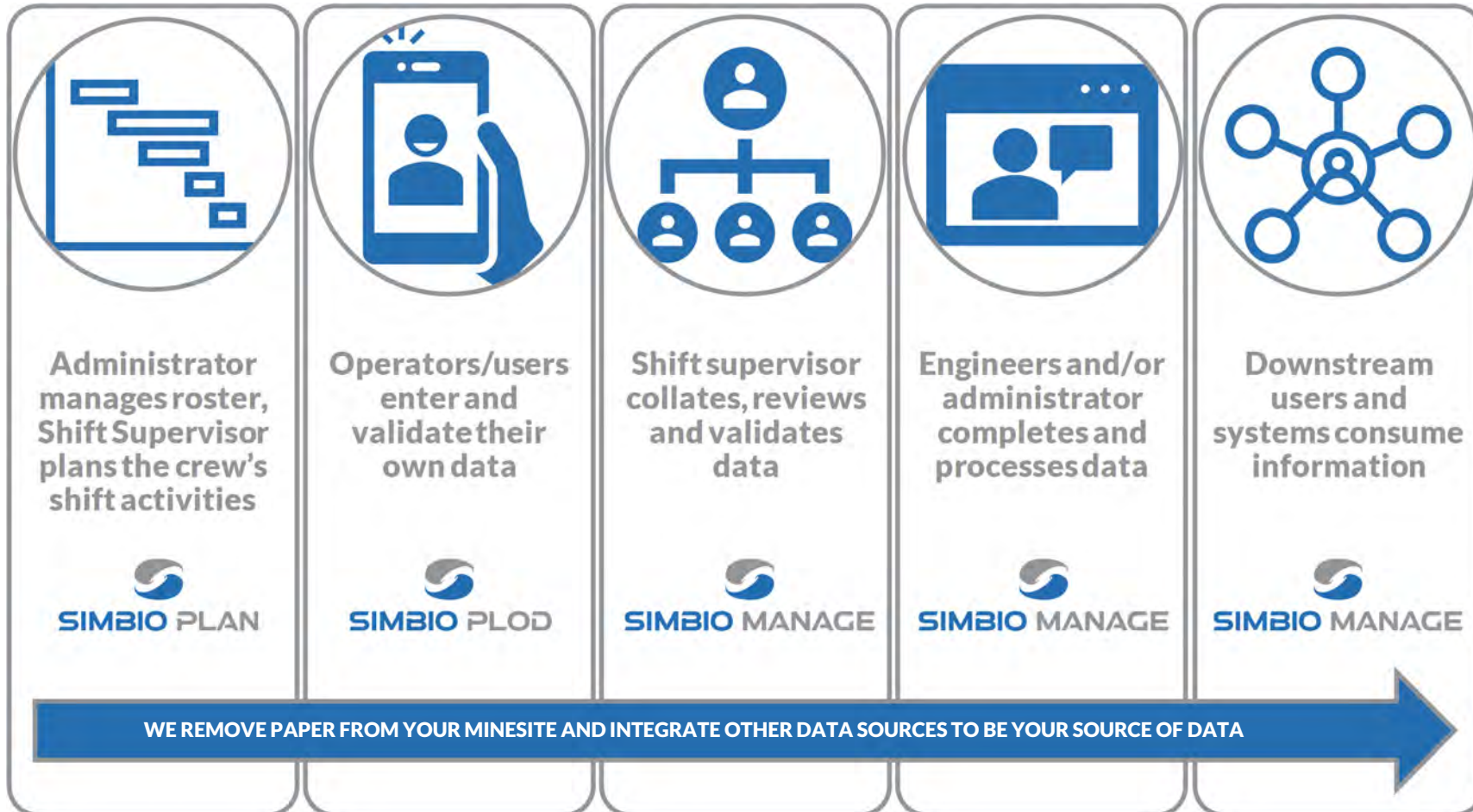
- Mining industry practical expertise with software development skills
- Long term team (internal and external) together for over seven years
- Core paperless data capture and data management system – Simbio captures and manages all of your operation’s data
- IoT devices for monitoring of environments, automating and controlling underground infrastructure such as pumps and fan starters.
- Network Infrastructure for Underground mining operations to allow monitoring, control and connectivity
- Over \$10M invested in product development to date, current ongoing improvements, development & roadmap spend circa \$750k-\$1M per annum
- Independent and agnostic – we work with your other partners to suit your requirements
- Collaborating with other technology providers to enhance the customer experience through integration and mutual product enhancement



What do we do



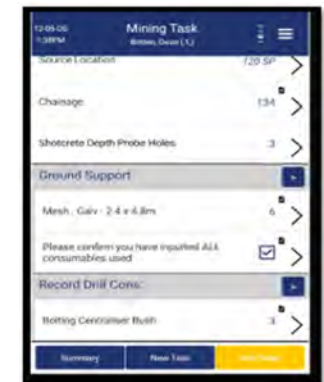
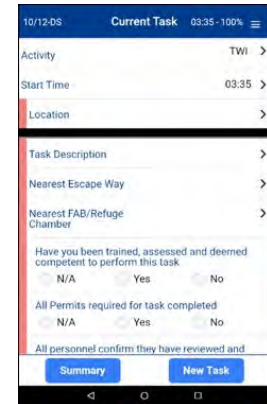
An Integrated data model which can scale



More than just a digital PLOD



- Simbio has been designed to make your minesite paperless
- Highly configurable forms make digitising your site based forms easy with a variety of input types available for form creation
- Mandatory questions for example requiring a photo or sign off from shiftboss
- Access history such as hazards identified, pre-start history, etc. direct on device
- Our PLOD app is designed to be provided to everyone on site, enabling true paperless entry of data
- We have the ability to drill down in detail for pure activity based costing for cuts, stopes, etc.
- Our MANAGE database can ultimately capture and store all your minesite data and integrate other sources to provide one version of the truth
- Photos and media stored securely in app, nothing left on device
- Latest release includes device to device direct data transfer and QR confirmation



THE SIMBIO ECO-SYSTEM

- Covering all data entry aspects (hours, tonnes, metres, etc) of the mining value chain for:

- Mining
- Maintenance
- Electrical
- Mill
- Stores / Inventory
- Tech Services
- Subcontractor data entry



- Manage your mine's entire dataset

- Equipment Time Usage
- Employee Time Entry
- Mining consumable usage
- TWI / Take 5 inspections
- Pre-Starts, Service Sheets
- Hazard recording
- Stockpile Tracking
- Survey and Grade reconciliations
- Compliance to plan
- Activity based costing inputs
- Integration of 3rd party data sources

Our systems comes pre-configured for rapid implementations, we load your site specific information and then refine to your site specific conditions as you go

Our solutions are proven over the long term – we were the first with digital PLODS



11 + YEARS



6 + YEARS

50+

Mine sites

265,000+

Development metres

550,000+

Digitised PLODS

650,000+

Take 5's / TWI's

78 Million+

Tonnes bogged

400,000+

Pre-Starts

6.7M+

Manhours tracked



Our Approach

We work with clients on their journey, true system, changes comes from sustainable improvements - We release new features as the workforce knowledge increases

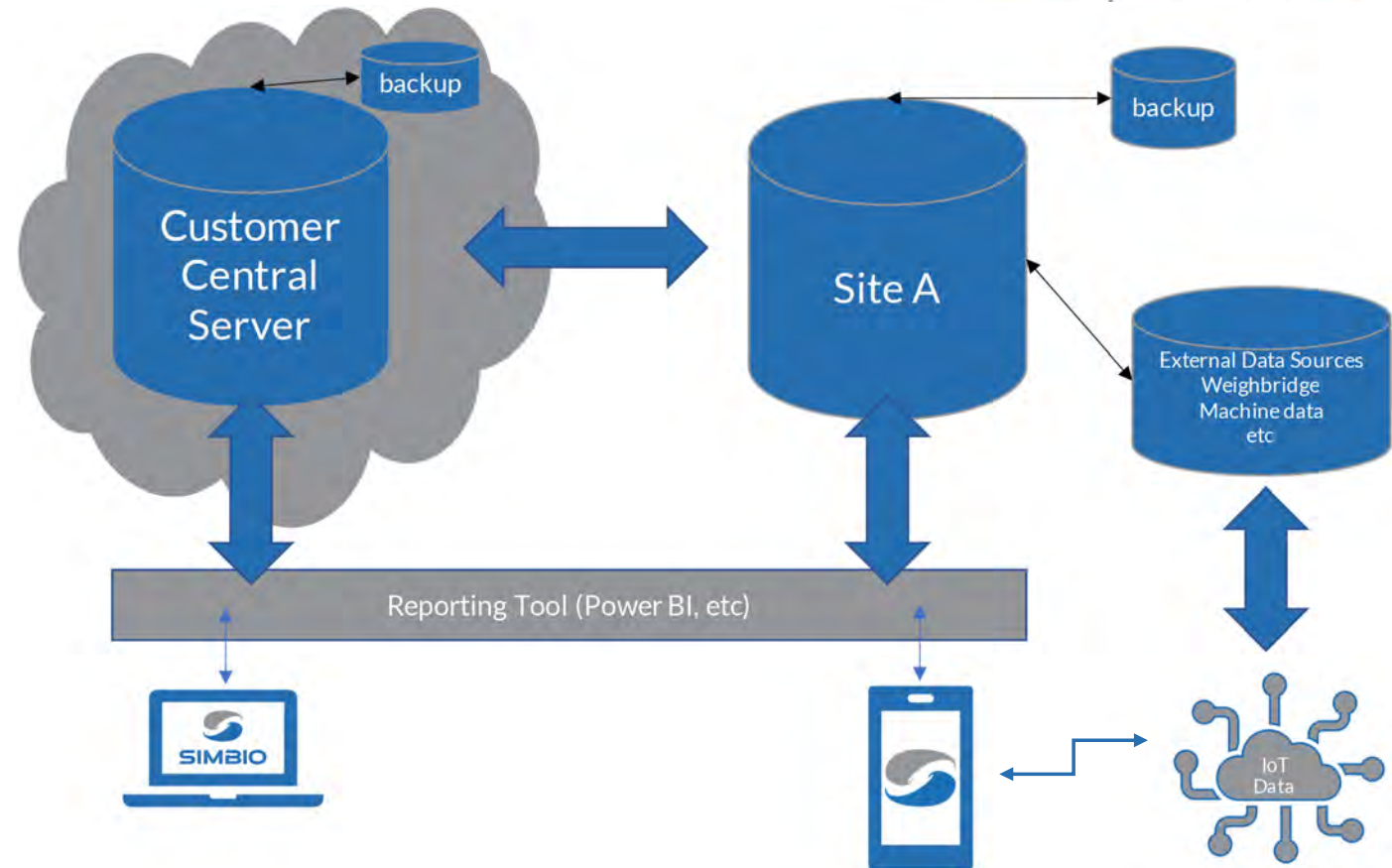
Our approach is to facilitate and assist in your journey

- **Understanding your data: Capture – Validate – Visualise – Refine – Improve**
 - How is it comparing to our targets
- **Where are the biggest opportunities to focus on**
 - Safety, Production, Costs
- **Commit to the change and improve**
 - Continue to understand your data to look for areas of best practice and concern
 - Integrate other data sources and look for opportunities to minimise rehandle



Access to Data

- Its your data – backups managed by customer installed on prem or in virtual machine
- Get a corporate view across all your operations
- Pre-defined summarised views processed for easy reporting and analysis
- Direct link to downstream warehouses
- Report using BI tools, excel connections, etc at company or site level
- Non-identifiable data fed into DT cloud for current AI/ML algorithms under development

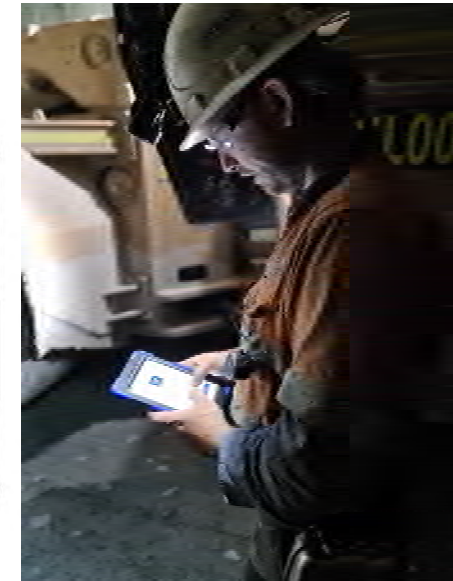


Simbio works completely offline on your minesite without the need for constant cloud connections

Simbio PLOD Devices



- Samsung preferred option (DT supply) – increased buying power, quality and life, models selected are proven performers
 - App optimised for Base level models (not requiring high end devices)
 - Everything pre-configured before arriving to site
 - Can implement Apple iPad mini's /iPhones if required
- Ruggedised further by heavy duty case and tempered glass screen protector
- Some higher end models used by geologists, Geotechs where HD media required for inspections and markups
- 10" screen devices for workshop – service sheets, multi-sign on
- Soti MDM solution used – control access to other websites, deploy other company apps, etc, config done by QR code
- Tablet Fleet used by workforce, staff and lighter users can download on own device (Android or Apple iOS)
- Refurb, screen replacements can be done by DT



Other Hardware available: Physical mounts for machinery, Display Mini-PC, Higher end tablets – used for Geotech/geology, IS tablets for explosive atmospheres



Simple Licensing model

- Pricing model is based on consumption and number of sites, not number of users
- Implementation and hardware – upfront – options to smooth implementation across year 1
- oSaaS (offline Software as a Service)
 - PLAN, PLOD and MANAGE pricing includes all modules and features - Additional charge is only for config, setup and training, no change to software pricing
 - PLODS - Operator/Fitter PLOD charged per shift, Staff – reduced rate for lite forms only (pre-starts, take 5's, etc)
 - PLAN and MANAGE - Per month charge for each module
 - Magman Annual License per site
- Custom forms, additional development, accelerated development on time and materials
 - Per form creation
 - Quoted longer term, complex functionality
 - Integrations to other systems on site

Value / Savings

- Pricing discounts offered for economies of scale
- Paper – substantial savings in removing paper from site
- Admin time saving – min 4 hours per day
- Shiftboss – completes shift in 15 minutes, not an hour
- Remove double handling of data (and errors)
- Streamline client and contractor data exchange
- Improved visibility – forward looking decisions
- Engage your end users
- Volume discounts offered for larger sites and/or multi-site use

Did You Know?

- What is the paper cost of a pre-start and TWI
 - Pre-Start ~ 22.5 cents
 - TWI ~ 10 cents
- Review TWI (Shiftboss)
- Review and enter a pre-start ~30 seconds (Maint)
 - ~80 cents
- Total cost of 2 forms ~\$1.125 as a minimum

Compared to

- Simbio Lite PLOD charge of \$0.80 per shift (unlimited pre-starts and TWI per person for the shift)
 - Imported automatically
 - Review by exception

Our product removes the need for a control room setup just to enter data

Use data like never before

- Data extracts that assist downstream processes
- Split capex and opex quantities (and hence apply costs) for uploads into financial systems
 - Location based knowledge of which area in your mine is capex and which is opex
 - Setup once on design, then report by date ranges and report on:
 - Quantities
 - Equipment hours
 - Labour hours
 - consumables
- Compare your schedule versus actuals – same format



Edit Location

Choose from Template

Location: 171000

Active:

Profile: [dropdown]

Source Code: [dropdown]

Destination Code: [dropdown]

Level: [dropdown]

Default Material: [dropdown]

Bogging Tram Distance: 50 - 100m

Work Area: [dropdown]

Production:

Development:

Orig Source Of Dirt for Truck/Bogger:

Backfill to Here:

Service Crew:

Is Trucking Destination?:

Is Loading Bay?:

Raisebore Hole:

Diamond Drill Hole:

Install Cables here?:

Escapeway:

Refuge Chamber:

Surface Works:

Stockpile:

Close Save and Close

OPEX

CAPEX

Simbio CLONE – Coming in 2023



- QA record of all activities (available for MANAGE QA review)
- A Digital Clone of your mine – more accurate than a twin
- Proximity detection and Resource management
- 3d visualisation tool in real time with ability to playback events, learn and improve with unique first person view
- Interactive ability (messaging, facetime style) including external stakeholders
- Geofencing ability for alerts and notifications, integrated with Geomoby
- Will look to remove as much effort from a control room operator as possible, utilising data science to auto-deliver insights and suggestions will be a key part to this success

SIMBIO CLONE

CUT SUMMARY

TOTAL COST	\$ 2865
TOTAL DURATION	47 HRS
COST PER M	\$ 1102

PHYSICALS FACE DRILLING

COST:	\$ 719	TENDER	\$652
DURATION:	2.3 HRS	TENDER	2.1 HRS
DRILL M	195	TENDER	166
HOLES	68	TENDER	66

PROTOTYPE

Deliver virtual training programs within your mine



Other Digital Terrain Products and Services



Magman Mining Software



- Digital Terrain recently acquired the business
- Widely accepted standard across the industry for explosives management for recording magazine transactions
- Specialised Intrinsically Safe tablets for use around explosives
- Provides statutory managers with a platform and tools to ensure explosives management compliance
- To be fully integrated with Simbio – maximising value form both systems, eliminating double handling of data



- ✓ Clear auditable records which are stored and backed up to a Microsoft database.
- ✓ No operators completing magazine books or calculating stock levels in the magazine.
- ✓ Provides oversight for mine managers to ensure the accuracy of the magazine records.



Inventory On Hand
DGM UG Mag 2
at Sunday, 7 March 2021

Description	Qty	Unit	Base Qty	Base Unit	Qty In Base
4.5m Orica LP81	1620 Det		36.00 Box		45
4.5m Orica LP81	360 Det		2.00 Box		180
4.5m Orica LP82	180 Det		1.00 Box		180
4.5m Orica LP83	3 Det		0.01 Box		180
4.5m Orica LP84	180 Det		1.00 Box		180
4.5m Orica LP85	529 Det		2.94 Box		180
4.5m Orica LP86	347 Det		1.93 Box		180
4.5m Orica LP87	238 Det		0.77 Box		180
4.5m Orica LP88	316 Det		1.76 Box		180
4.5m Orica LP89	306 Det		1.70 Box		180
4.5m Orica LP911	266 D				
4.5m Orica LP912	134 D				
4.5m Orica LP913	131 D				
4.5m Orica LP914	160 D				
4.5m Orica LP915	156 D				

- ✓ Simple paperless explosives magazine stock control tool (installed on intrinsically safe tablets, certified RF/EM testing certificates).
- ✓ No operator calculations required.
- ✓ Each transaction recorded electronically in Magman with date/time, operator, stock movement and location.
- ✓ Complete magazine stocktakes quickly and accurately.
- ✓ Operating across over 50 sites in Australia.
- ✓ Automated emailed or web based reports - stock level, stocktakes & inventory re-order.
- ✓ Set up pre-selected development face patterns and upload individual production shots.
- ✓ Track explosives to their locations.
- ✓ Custom cloud usage.
- ✓ Flexible tablet interface to meet your site requirements.

Contact:

Magman Mining Software
 Enquiry@magman.net.au
 Ph 1300 MAGMAN



EMS-V3



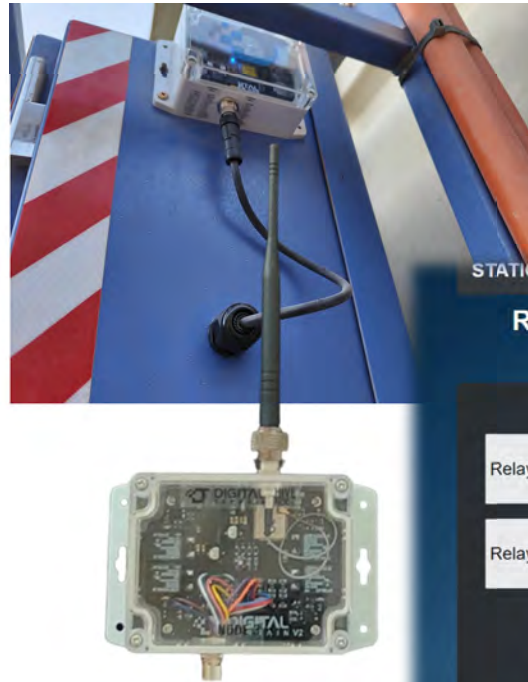
- Live Vent readings underground; temp (wet and dry), NO₂, Dust, wind speed, etc
- Real-time view of your underground environment conditions
- Transportable and easy to install – connect to a POE port, calibrate on the surface, then underground with an anemometer
- Calibrated with simple step by step instructions via web interface or on-board touch interface.
- Email alerts and interactive dashboard interface with optional SMS alerts to reduce re-entry times
- Direct integration to Modbus TCP/IP
- Competitively priced per unit compared to others on the market



HIVE-MESH



- Self Meshing and Self Healing network
- Real-time monitoring and control of connected Node devices
- Easy to install – Plug and Play to existing Fan Starters and Pump Starters
- Integration with RDI-SMS HIVE Master
- Long range meshing capabilities – 5KM between Nodes for LR Nodes, 500M between Nodes with Local Hotspot for web control
- Integration to Modbus via RDI-SMS HIVE Master
- Competitively priced per unit



STATION MASTER SUITE - NODE CONTROL (PROTOTYPE 1)

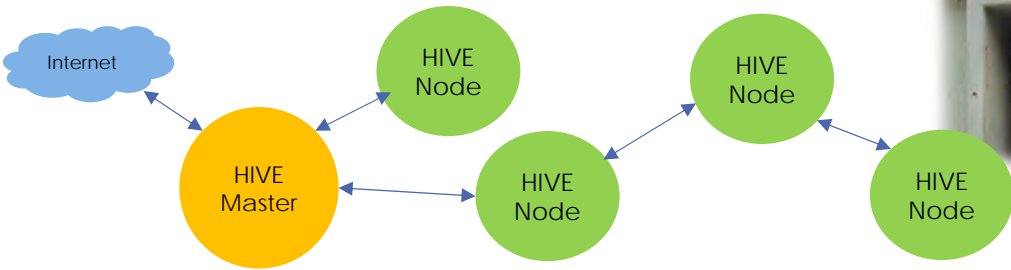
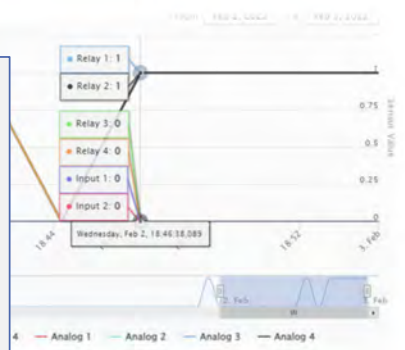
ROUSE DOUGLAS INTEGRATION

STATION MASTER SUITE

Last Message Received: 03/02/2022 09:27:07

Relay 1 TOGGLE	Relay 1 ON	Relay 1 OFF	Current Relay 1 state: 1
Relay 2 TOGGLE	Relay 2 ON	Relay 2 OFF	Current Relay 2 state: 1
Relay 3 ON	Relay 3 OFF	Current Relay 3 state: 0	
Relay 4 ON	Relay 4 OFF	Current Relay 4 state: 0	

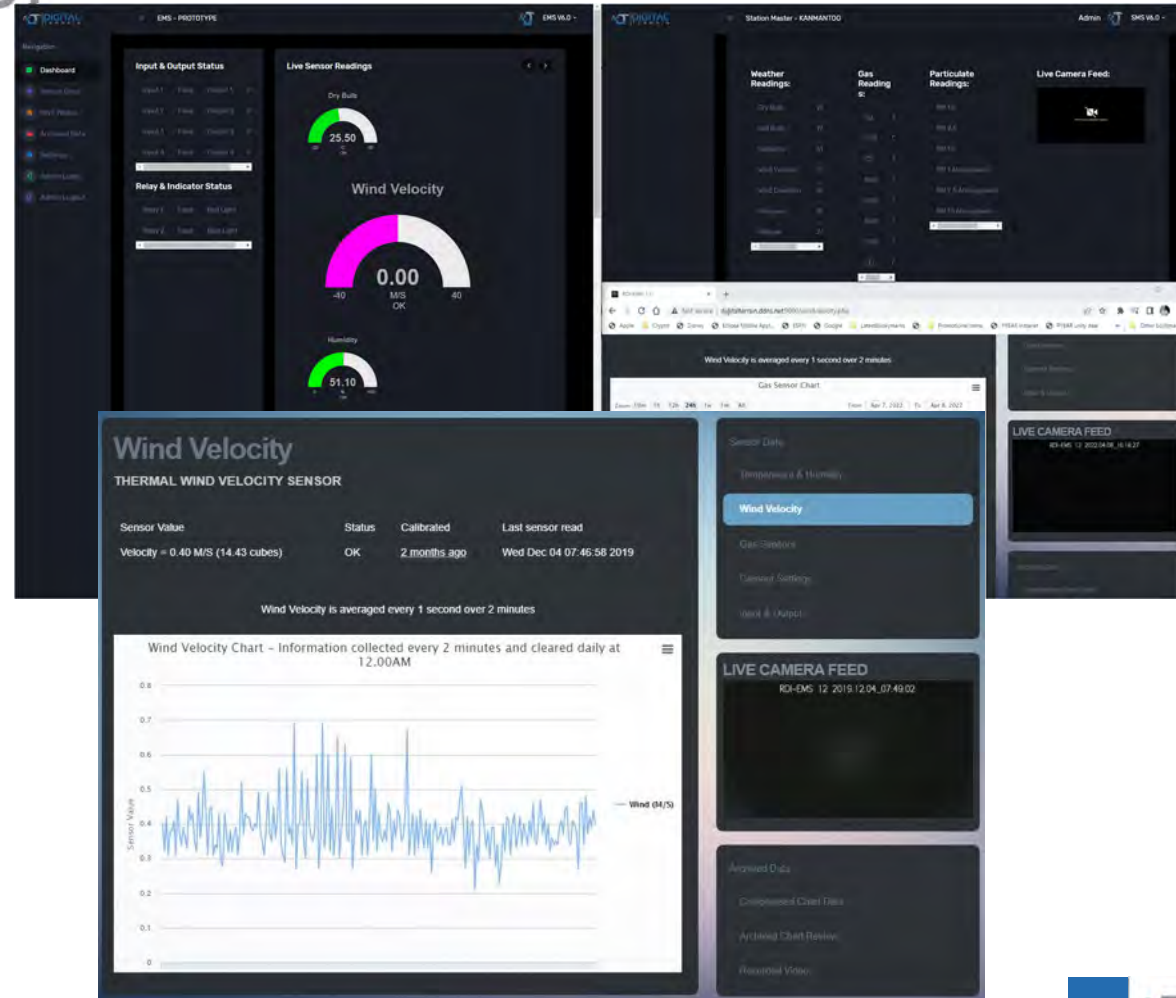
- Temperature and Humidity HIVE-NODE for remote sensors
- Gas Sensor HIVE-NODE for remote sensors
- Dust Particulate HIVE-NODE for remote sensors
- Analog Output and Digital Output HIVE-NODE for control of Ventilation Louvers
- SIMBIO IoT direct Integration in 2022
- WiFi NAT Internet Access Hotspot on each HIVE-NODE



RDI-SMS



- Station Master Suite for multiple RDI-EMS 12 Sensors and HIVE Nodes ported to a centralised server
- Real-time view of your underground environment conditions
- Control and Automation of RDI-EMS 12 and HIVE Nodes
- Redundant Storage location of critical underground environmental readings
- Expandable appliance for additional control and automation requirements



RDI-LVF



- 7" or 3.5" Touchscreen interface for in vehicle proximity awareness and OBD Data collection from the vehicle
- Optional single or dual camera models for recording in cabin and out of cabin footage
- A dash cam without the need to manually download files, capable of real-time WiFi viewing over network
- Easy detection and integration with existing WiFi proximity tags, Bluetooth and other emitting sources
- Logging of OBD Data for vehicle diagnostics
- Integration to RDI-SMS Server for redundant backup of recorded videos and logged proximity interaction data and vehicle data
- Competitively priced per unit



RDI-WRS:

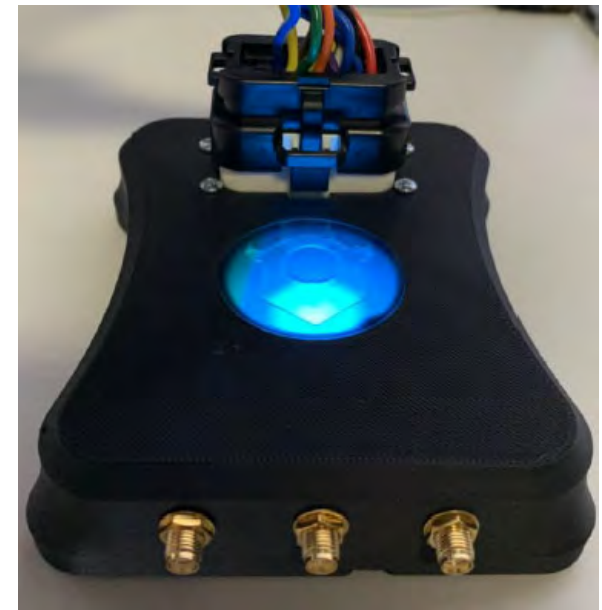
Zero Emission Wind Powered Wi-Fi

- Wireless Repeater System, no power lines, no cables but hi-speed Wi-Fi, long life battery powered option available as well
- Harnessing the energy of wind, no additional cabling is required. Save time and power costs in extending your underground network by implementing a sustainable eco-friendly alternative
- The RDI-WRS sets itself apart from other similar devices by having an in-built micro-turbine, allowing it to charge its internal battery and power the repeater circuit from wind velocity, unlike similar products, this device doesn't require regular battery changes even with full network usage day and night.
- Harnessing our meshing capability, next generation models will be stand-alone and generate their own Wi-Fi network, each unit becomes a hotspot
- Hi-speed, low latency connectivity at a lower upfront and ongoing cost



Machine Data

- In Q1 2023 will commence integration of machine data devices into Simbio with trials being undertaken on 2 customer sites
- Collaboration with another company to ensure design is 100% compatible and flexible with Simbio
- We will control the data – flexibility in solving site specific conditions and requirements and use cases, no more waiting months for an OEM enhancement to be approved
- OEM agnostic, with additional sensors able to be fitted for specialist equipment such as development and production drills
- Data visible in real-time in Simbio when connectivity is available, or data stored offline within Simbio PLOD ensuring current data available
- Will integrate into Simbio PLOD such as automatic entry of engine hours into a pre-start

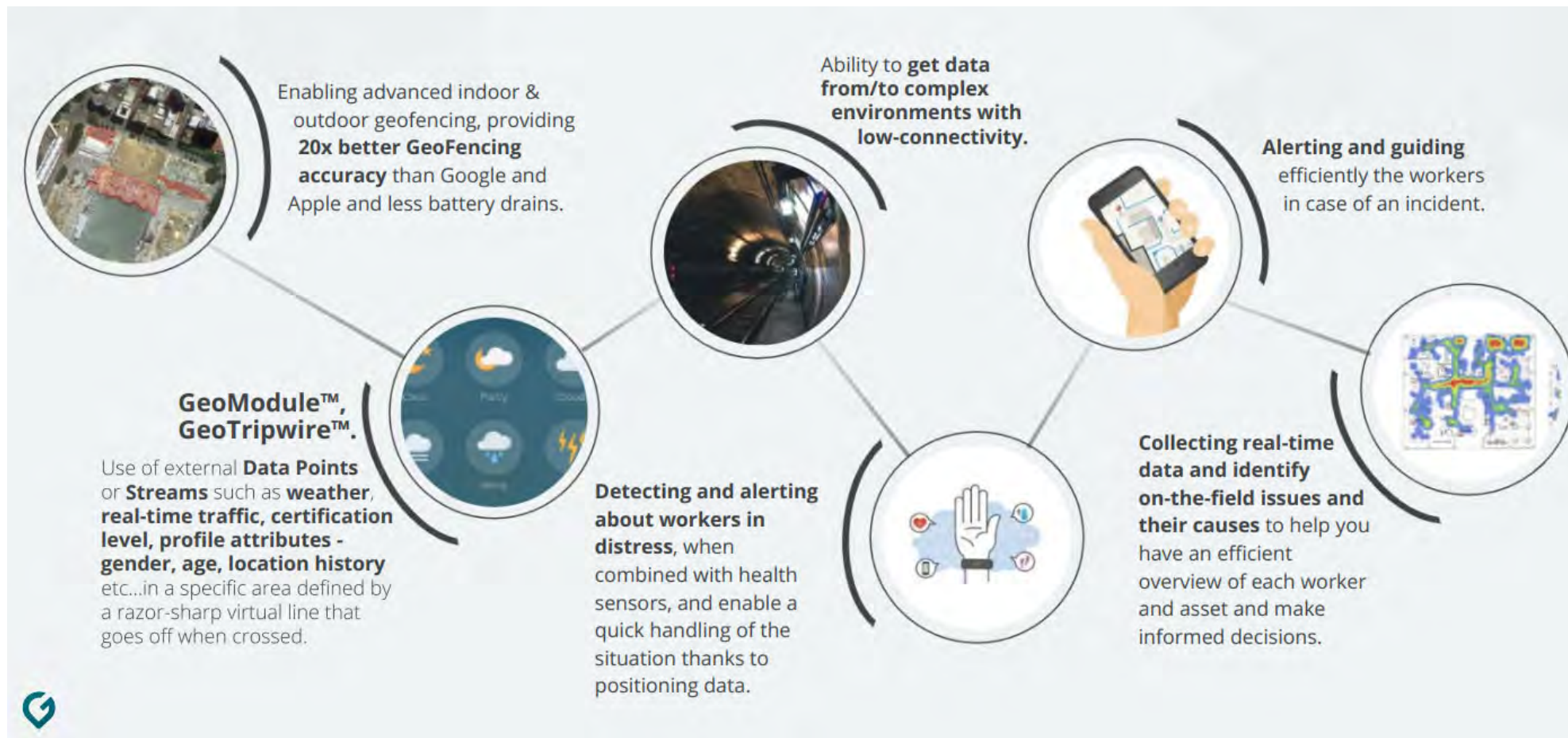


Geomoby Re-seller and Collaboration

- Digital Terrain is an authorised reseller for the product
- Over 2 year relationship between Digital Terrain and Geomoby, assisting in their trials and development and now collaborating on solutions together
- Intention is for both solutions to be completely integrated, this will unlock synergies and data generated in one system to be consumed in the other
- The culmination to this will be an integrated real-time visualisation tool; Simbio CLONE which will incorporate Simbio data, Geomoby, LiDAR scans, IoT devices, etc.
- Key Points on our Collaboration
 - Harness location and proximity detection within Simbio – feed data direct into PLODs such as location and machine data
 - Leverage connectivity underground with our IoT devices for remote triggering and control (fans, pumps, environmental devices) and machine data feeds
 - Bluetooth density of tablets assist with meshing network



How Geomoby can help in a complex environment



Robust hardware – easy to install

- GeoMoby Nodes
 - No cables required
 - 10-12 month battery life, alerts when running low
 - Rapid Install – 2km, 16 nodes installed in 2.5 hours
 - Meshes with other BLE devices to improve signal strength
 - Typically 110-130m apart, have achieved 250m between nodes in a straight decline
- Smart Sensors
 - Beacons, GeoTags, Smart watches
- PLOD devices Integrated
- IoT devices Integrated



Use Cases for mining

- Monitoring Gate entries and exits
- Automated tag board
- Heritage location protection and monitoring
- Health and fatigue monitoring
- Proximity Awareness (combined with Simbio IoT LVF)
- Ug back haul for IoT data network
- Device to device communications
- Asset haulage speeds and cycle times – long term
- Short term productivity analysis in a defined area
- Geo-fencing of prohibited or restricted areas such as fixed plant, barricades, etc.
- Alerts based on a series of trigger events from various sources

How does it **work**?

EXOGENOUS VARIABLES



People,
Assets & vehicles,
Buildings,
Weather indicators,
Real-time traffic,
Location history,
and more.

OUR SMART SENSORS



Beacons,
GeoTags,
IoT devices,
Smart watches,
phones & tablets,
and more.

GeoMoby FEATURES



Indoor & Outdoor Geofencing
Activity Monitoring
Indoor Positioning
Indoor Mapping
Time Tracking
Health Monitoring



Drone services & photogrammetry processing



- What is it

- Semi-Autonomous LiDAR / SLAM* mapping solution
- Colourisation of point clouds now available
- AL2 – beyond line of site autonomy now available

- Applications

- Shaft inspections
- Pre and Post Area volume analysis (e.g. shotcreting)
- Under / Overbreak Mapping
- CMS alternative
- Stockpile volumes
- Re-Entries
- Ground monitoring
- Photogrammetry
- Rapid Mine Digitisation for Simbio CLONE / Digital Twin creation



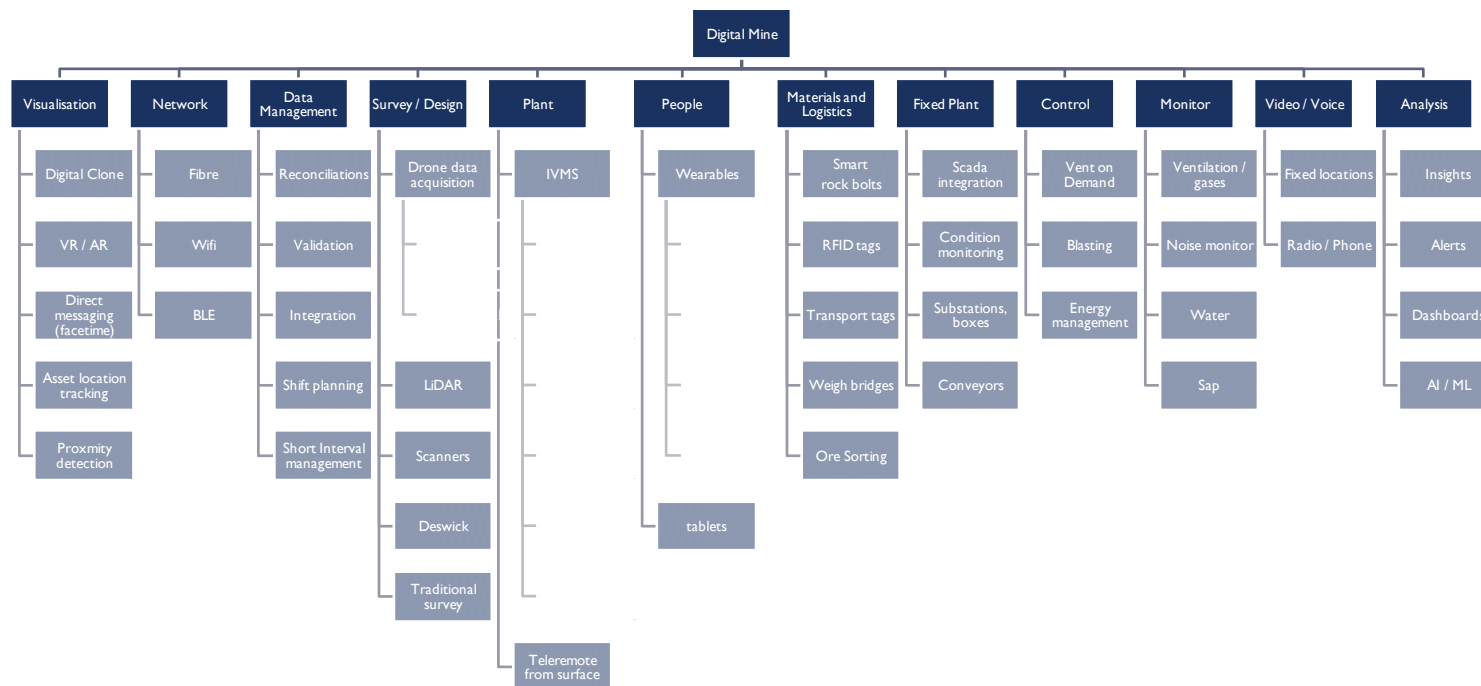
* *Simultaneous Localisation And Mapping*



Professional services



- Professional services available focussed on technology, data and digitisation
 - Data Analysis, reporting and Insights
 - Digitisation and data mapping strategies
 - Roadmap development
 - Custom Development
 - Independent cost model generation, value driver trees, etc.

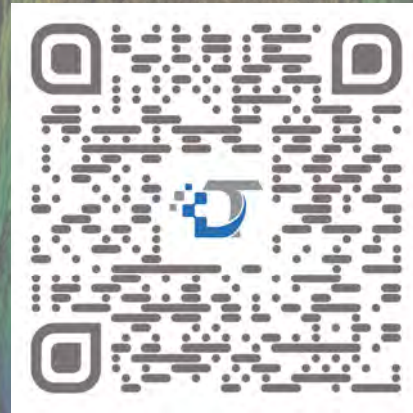


Thank you

CONTACT US:

www.digitalterrain.io

info@digitalterrain.io



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