

Autônomo
Mining Technology Solutions



COMPANY OVERVIEW

Autônomo Pty Ltd was formed in 2018 and takes pride in being an Australian owned and operated business. Since inception, our vision has been to provide our customers with unsurpassed workmanship and service in the technology sector.

By focusing on reliability and quality, Autônomo continues to demonstrate sound performance in delivering our technology solutions across Australia.

With over 40 years experience, our reputation has been built upon strong and trusting customer relationships and results. Our team of highly skilled technicians and associated services have been intentionally modelled to sustainably manage technology projects and their associated solutions.

Autônomo provides a unique ability to manage end to end services for technology, starting from design, through to installation, commissioning, and ongoing maintenance.

By listening to our customer's needs - and working closely with them to develop a picture of success - we can achieve unique, efficient and practical solutions suitable for the end user.

We believe innovation needs to be viewed in a comprehensive manner and the action taken to resolve any malfunctions shall be sustainable for the end user.

“Identify what we did yesterday, learn from the past and make it better for the future.”

MISSION

We provide a specialised network of resources, processes and equipment that help our clients adopt, implement, and sustainably integrate technology into their businesses.

The First Choice for Technology Integration.





AUTONOMO COMPANY VALUES

Family

Creating happiness and well-being through support and encouragement for the people we work with and care for.

Respect

Fostering mutual recognition, appreciation, and trust between our people and clients, nurtured by our culture.

Communication

Empowering our team to contribute effectively with our clients and each other.

Sustainable Growth

Aligning our decisions with the right people, processes, and profits to be the first choice for technology.

Empowerment

Encouraging staff to contribute and be involved in decision-making. Supporting staff through training and education to achieve high standards.

Quality

Incorporating best practices and standards to ensure consistency and reliability in our business, providing the highest levels of products and services.

Autônomo Values

At Autônomo our foundation is built upon a set of unwavering values that serve as the compass guiding every decision, action, and interaction within our organization. These values are not merely words on paper; they are the essence of who we are and the principles that drive our daily endeavors.

-  **Family**
Creating happiness and well-being through support and encouragement for the people we work with and care for.
-  **Respect**
Creating happiness and well-being through support and encouragement for the people we work with and care for.
-  **Communication**
Empowering our team to contribute effectively with our clients and each other.
-  **Sustainable Growth**
Aligning our decisions with the right people, processes, and profits to be the first choice for technology.
-  **Empowerment**
Encouraging staff to contribute and be involved in decision-making. Supporting staff through training and education to achieve high standards.
-  **Quality**
Incorporating best practices and standards to ensure consistency and reliability in our business, providing the highest levels of products and services.



AUTONOMO BEHAVIORS THAT ALIGN TO COMPANY VALUES

BEHAVIOURS THAT ALIGN

Family

- I am supportive of everyone I work with
- I listen to understand, learn, and connect
- I make compromises when necessary

Respect

- I engage in active and respectful communication
- I maintain a tidy and organised workplace
- I display open and welcoming behavior whenever representing our organisation

Communication

- I value everyone's contributions
- I engage in active listening with others
- I speak to others calmly and respectfully

Sustainable Growth

- I am inquisitive and open to new possibilities
- I plan effectively with clear statements of work and processes
- I consider the people, process, and profit components in all my work

Empowerment

- I support others in making their own decisions
- I encourage feedback to foster growth
- I create a positive environment

Quality

- I ask questions when unsure
- I record data and changes accurately
- I complete Inspections and carry out quality checks

BEHAVIOURS THAT DO NOT ALIGN

Family

- I become confrontational and physical with others
- I neglect to care for those I work with
- I belittle others with my comments

Respect

- I have poor personal presentation
- I misuse or damage company property
- I am disrespectful in my communication

Communication

- I tell more than I ask
- I expect others to know the answer without guidance
- I ignore others' opinions and contributions

Sustainable Growth

- I fail to allocate the right budget or people
- I neglect to plan and manage change effectively
- I don't allow time for training and development
- I ignore feedback
- I contribute to a negative working environment
- I follow directions without question or understanding of what is required

Quality

- I make decisions without consultation or reference
- I am unwilling to adopt standards or accept constructive criticism
- I fail to maintain pride in my work and administrative tasks

CAPACITY WORKSHOP 1 PERTH, WA

HEAD OFFICE

FABRICATION

ENGINEERING WORKSHOP

- 1617 SQM LAND AREA
- 926 SQM NET LETTABLE AREA
 - 719 SQM WAREHOUSE
- 207 SQM OFFICES SPLIT OVER TWO LEVELS



CAPACITY WORKSHOP 2 PERTH, WA

AUTONOMO INSTALLATION CENTRE
IS DESIGNED FOR TECHNOLOGY
INTEGRATION FOR BOTH LIGHT
AND HEAVY VEHICLES

- INSTALLATION CENTRE
 - HARNESSING
 - TRAINING CENTRE

Autônomo Pty Ltd



AUTONOMO ACADEMY

FIVE STANDARDS OF TRAINING &
COMPETENCY

LEVEL 1 – FUNDAMENTALS & BUSINESS
COMPLIANCE

LEVEL 2 – INTRODUCTION TO TECHNOLOGY
CLIENT TECHNOLOGY SUITES

LEVEL 3 – TECHNOLOGY & BRAND SPECIFICS

LEVEL 4 – TECHNOLOGY PROGRAMMING &
COMMISSIONING

LEVEL 5 – IN-FIELD LEADERSHIP & MANAGEMENT

Autônomo



AUTONOMO HARNESSING





CAPACITY MACKAY, QLD

9/70 CONNORS ROAD,
PAGET QLD, 4740

320 SQM FLOOR AREA

- EC PROJECTS
- LV FIT-OUTS
- IVM'S

Autônomo Pty Ltd



APEX WAY PERTH, WA

TRAILER FITOUT
STORES
PROCUREMENT



AUTONOMO SPECIALISED LABOUR

- Auto Electricians
- Heavy Diesel Mechanics
- Heavy Diesel Fitter
- Heavy Road Transport Fitter
- Light Vehicle Mechanic
- Service Persons
- Automotive Mechanics
- Autonomous Technicians
- Technology Installers
- HV Electricians
- Drill Product Support
- Fabricators / Boilermakers
- Mining System Technicians
- Communication Technicians

Additional Services

- Engineering
- Technical Document Writing
- WHS Labour





OUR HSE POLICY

Autônomo is committed to achieving the highest performance in health, safety and environment to achieve our objective of an injury and incident free working environment. To achieve this, we will ensure that all Autônomo operations have an absolute commitment to safe work practices and environmental management.

To deliver on our commitment, we will:

- Communicate Autônomo’s health, safety and environmental policies and procedures to all personnel and other stakeholders where necessary to ensure they are aware of their obligations under each policy
- Comply with all applicable health, safety and environmental laws, regulations, statutory obligations and other applicable requirements
- Involve employees and contractors in the management of health, safety and environmental performance to eliminate environmental impacts, security concerns, property damage, and injury or illness incidents
- Train employees to ensure they are accountable for their area of responsibility
- Manage risk by implementing systems to identify, assess, monitor and control health, safety and environmental hazards
- Ensure that all health, safety and environmental programs are audited on a regular basis to evaluate validity, integration and improvements
- Continually improve our performance by establishing objectives and targets, and monitoring results

All personnel are responsible for working safely and protecting the environment. No task is so important, no schedule so urgent that the job cannot be done safely.

THE BUSINESS WORKS WITH THE FOUNDATIONS FOR AS 4801, ISO 45001 & ISO 14001



OUR QUALITY POLICY

It is the policy of Autônomo to operate our business in a manner that consistently meets or exceeds the quality standards set by our management team. To achieve this, we are committed to continuous improvement in our operations, and in the products and services provided by our company.

To meet these requirements, we have implemented management systems which promote continuous improvement and provide assurance that we are fulfilling our commitments in the provision of ISO 9001 and to our clients. To achieve this goal, we recognized that:

Our objectives are to:

- Ensure continuous improvement of our quality management system and associated processes
- Provide employee communication, consultation and training to ensure competent persons are managing the quality management system effectively and efficiently
- Provide a framework for establishing and reviewing quality objectives
- Identify and strive to the needs of our clients
- Achieve efficiency in our operations, attention to detail, and responsiveness to customer priorities and satisfaction
- Provide a quality product and level of service which eclipses our client's expectations
- Provide a working environment where continuous improvement is encouraged and facilitated as any other managerial function within the business
- Monitor measure and analysis its quality management system and business for suitability within the market

We as a company will:

- Provide a service that our clients benefit from these commitments
- Train all personnel in the identification of non-effective systems or processes
- Minimise waste and non-value-added time in our processes, to provide a quality and cost-effective product or service
- Support the adoption of appropriate quality systems and management principles in order that all personnel are competent in quality management

Personnel are expected to:

- Assist and adhere to this policy and associated management systems
- Proactively participate in the achievement of the company's objectives and targets



OUR FITNESS FOR WORK

Autônomo is committed to providing a safe, efficient, and productive work environment for all personnel and recognises that employees and contractors have the right to work in an environment free from alcohol and drug abuse.

Our strategy

By working with our personnel and being able to proactively identify problems and seek appropriate solutions to prevent reoccurrence.

- All operations within Autônomo shall have a blood alcohol standard of 0.00%
- Recognising abuse of alcohol and drugs and supporting our personnel
- Educating employees about how alcohol, drug and other substance abuse may affect their ability to work effectively, and how it affects others
- Recognising that personnel within the organisation are important to the success of the business
- Provide resources to employees who seek assistance for alcohol/drug dependency
- Alcohol testing of personnel
- Taking action when an employee's job performance becomes affected, or when there is reasonable cause to believe the safety of personnel or others may be adversely affected by alcohol or drug abuse
- Providing procedures and training on dealing with alcohol or drugs
- Enforcing consistent disciplinary action for breaches in HSE matters

All Autônomo management and supervisory staff will be responsible for ensuring this policy is adhered to.



TECHNOLOGY CAPABILITIES

Autônomo specialise in short- or long-term labour hire for both project and site roles.

We have a very experienced team of heavy-duty mechanics, fitters, auto electricians, mining systems technicians, boilermakers, senior consultants, engineers, supervisors and project managers.

Specialising in automation, wiring harnesses, instrumentation, electrical and telecommunications systems. We provide engineering, integration, product sales, customized service kits and full maintenance solutions to our customers.

We operate in the mining, oil and gas, transportation, utilities, healthcare, emergency services, security and construction industries.

Autônomo currently work with - but is not limited to - the following automation and telemetry systems:

- Caterpillar Minestar
- Modular PTX Dispatch
- Tyre Sense
- Caterpillar Terrain
- Caterpillar DSS (Driver Safety System)
- IVMS (In Vehicle Monitoring Systems)
- AVI Radios (WiFi and LTE Networks)
- Terrain for Light Vehicles
- Autonomous Trucks (All types)
- ADS (Autonomous Drilling Systems)
- Sunpower Solar Systems
- Cisco Radio Networks
- Turnkey Solutions
- Clark Masts servicing
- Geroh Masts servicing
- Trailer and Skid battery systems
- Custom bracket fabrication
- Digital 2-way radio systems (Tetra)
- 2 Way Radio Systems (Simoco)
- Technology and Mining Systems of all kind
- Solar Trailer and Skid design, engineering, fabrication
- Control Panel / Switch panel design, engineering, fabrication, testing and commissioning
- Modular Frontrunner AHS (Autonomous Haulage Systems)
- Labour Hire (Technicians / Engineering)
- Bywire and Autonomous solution
- Hexagon - Technologies
- GET systems
- DASH Technology (BHP)
- Vehicle to Vehicle (V2X)
- Fleet Management Systems (FMS)
- Collision Awareness System (CAS)
- Dozer NLOS
- V2X

AUTONOMO – LOCATIONAL SUPPORT

SUPPORTED BY 120 TECHNICIANS NATION WIDE



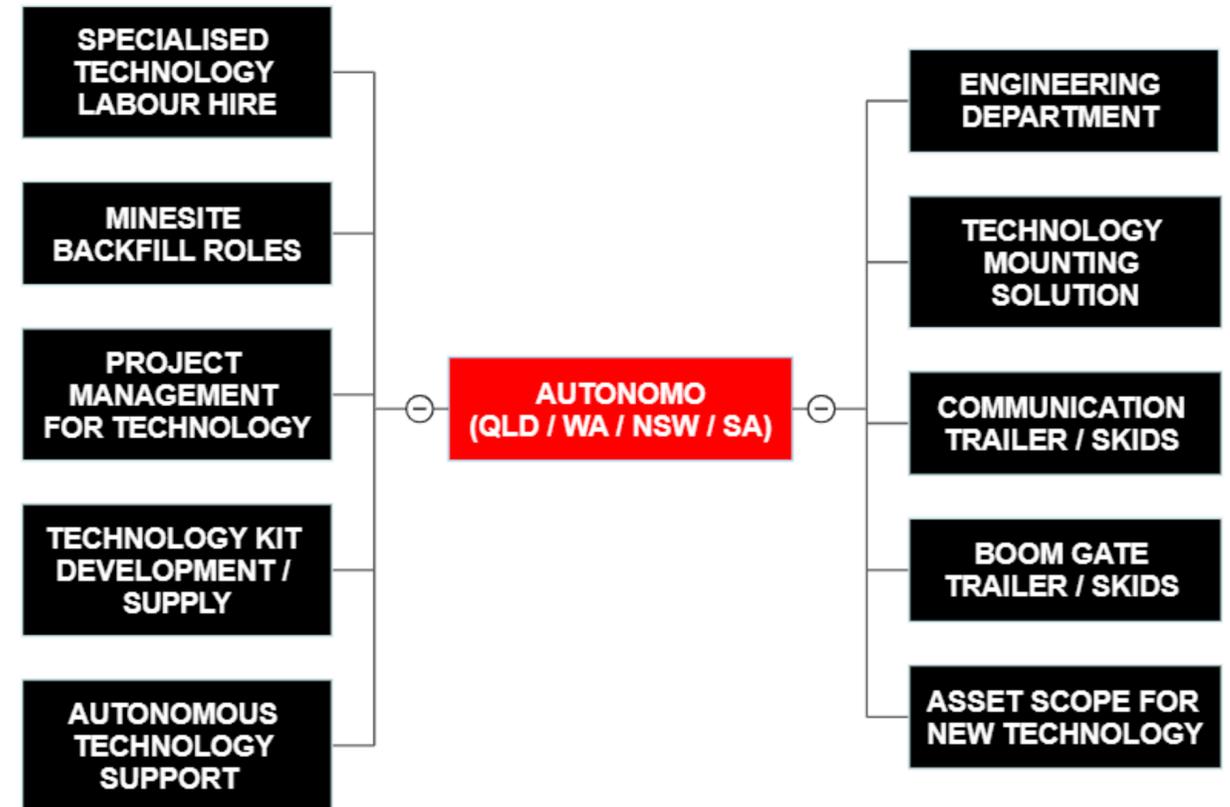
SERVICING VAST AREAS NATION WIDE



Autonomo has provided technicians and completed projects all across Australia.

From local support to national technology rollouts
Autonomo can do it all.

COMPANY SERVICES

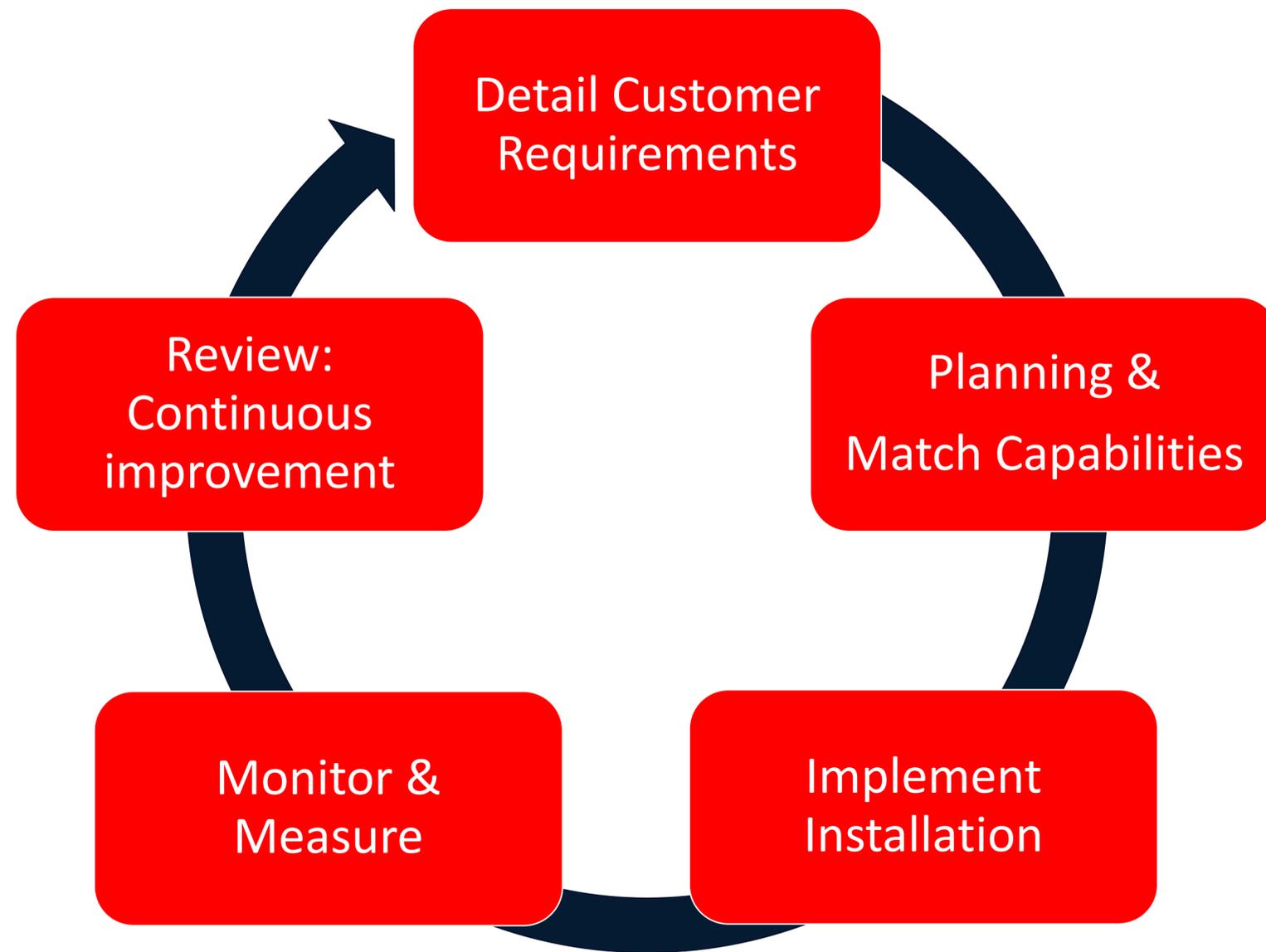


Autônomo

INSTALLATION EXCELLENCE PROGRAM

Autônomo is excited to share with you the principles we take towards our technology installations.

Autônomo understands that the business needs to be aligned with the expectation of our customers and our service capabilities to execute a sustainable and functional solution.





AUTÔNOMO PRODUCTS & SERVICES

Autônomo team of specialists can design and fabricate communication trailers and skids.

Our team of specialists have worked on building communication trailers & skids for over 15 years. Our trailers & skids are designed for operational reliability in some of the harshest environments on earth.

With this product our team have access to a number of industry leaders that supply equipment used for solar and communications systems, which allows Autônomo to work closely with our customers to ensure we provide advanced technology solutions to aid them in all their communication needs.

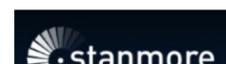
Our key features include manufacturing user friendly, light weight, ergonomically assessed, reliable communication systems and equipment.

Autônomo currently designs, fabricate and manufacture the following trailer & skids solutions including:

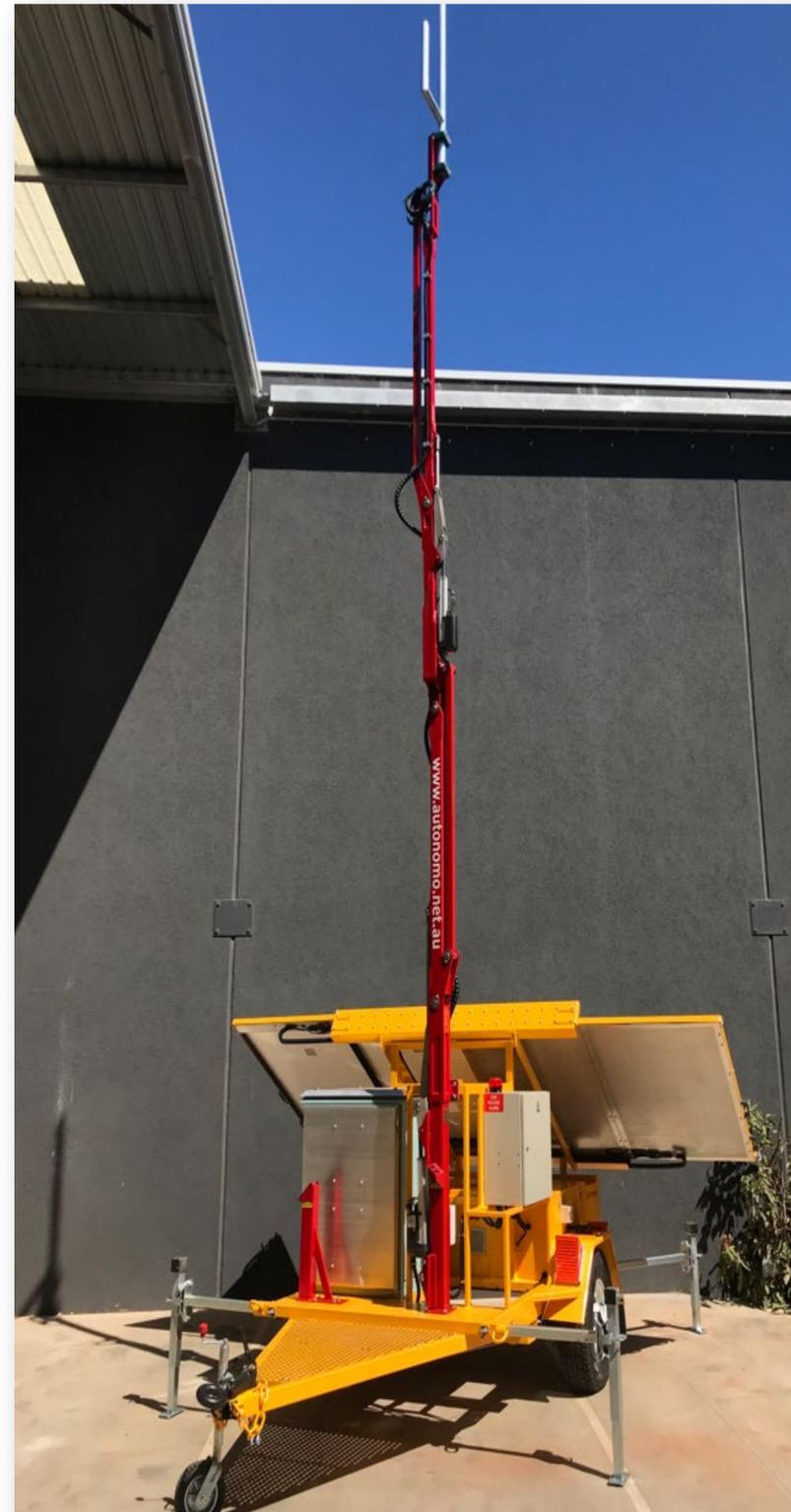
- Wifi Solar Communication Trailers
- Wifi Smart Communication Trailers
- Multiple Size Wifi Solar Communication Sleds
- Autonomous Boom Gates
- Solar Security Gates
- Solar light stands
- Communication Trailers

With our state-of-the-art facility we can fulfill high manufacturing volumes, which has led to Autônomo developing L.E.A.N. processes for a guaranteed quality product.

Associated Partners



COMUNICATION TRAILERS



AUTONOMO CAN ALSO PROVIDED A 2 X MAST SOLUTION, DESIGNED TO YOUR SPECIFICATION

BOTH J-POLE & HEADSTOCK

ASK US FOR OUR TRAILER PRICING & SPECIFICATIONS GUIDE

Mast	Specification
Maximum Allowable Wind Speed	100 km/h
Maximum Allowable Payload	35 kg
Nested Height	2000 mm
Nested Width	1340 mm
Extended Height	8000 mm
Mast Extension and Retraction	Linak Linear Actuators (3)



COMMUNICATION TRAILERS

ASK US FOR OUR TRAILER PRICING & SPECIFICATIONS GUIDE.

Items	Specification
Weight with the 24 Batteries	2875kg
Length	5.20m
Width	2.20m
Height in Transport Position	2.64m
Height with Antenna Mast Extended	8.06m
Height with Antenna Mast Extended, including headstock	9.36m
Number of Solar Panels	6
Solar Panel (SunPower) size	1046mm x 1690mm
Solar Panel (SunPower) Rating (each)	395W
Number of Batteries	24
Type of battery	C12-105XDA
Weight of batteries	29Kg, Total 695 Kg
Solar Charging Regulator	Victron MPPT 150/35
48VDC Power Enclosure	B&R 600x600x300mm IP66 enclosure
Control/ 12VDC Enclosure	B&R 600x600x300mm IP66 enclosure
Communications Enclosure	IP55 19" 18RU FIELD CABINET – 1075x750x800mm
Bearing Grease	HBT Grease2
Wheel Chocks (orange)	4
Maximum Towing Speed (off road)	40km/h
Maximum deployed wind speed rating	85km/h
Maximum stowed wind speed rating	120km/h
Max height of the mast	8.2m
Tyre Pressure	38psi or 262KPa



Autônomo

Experts in Technology



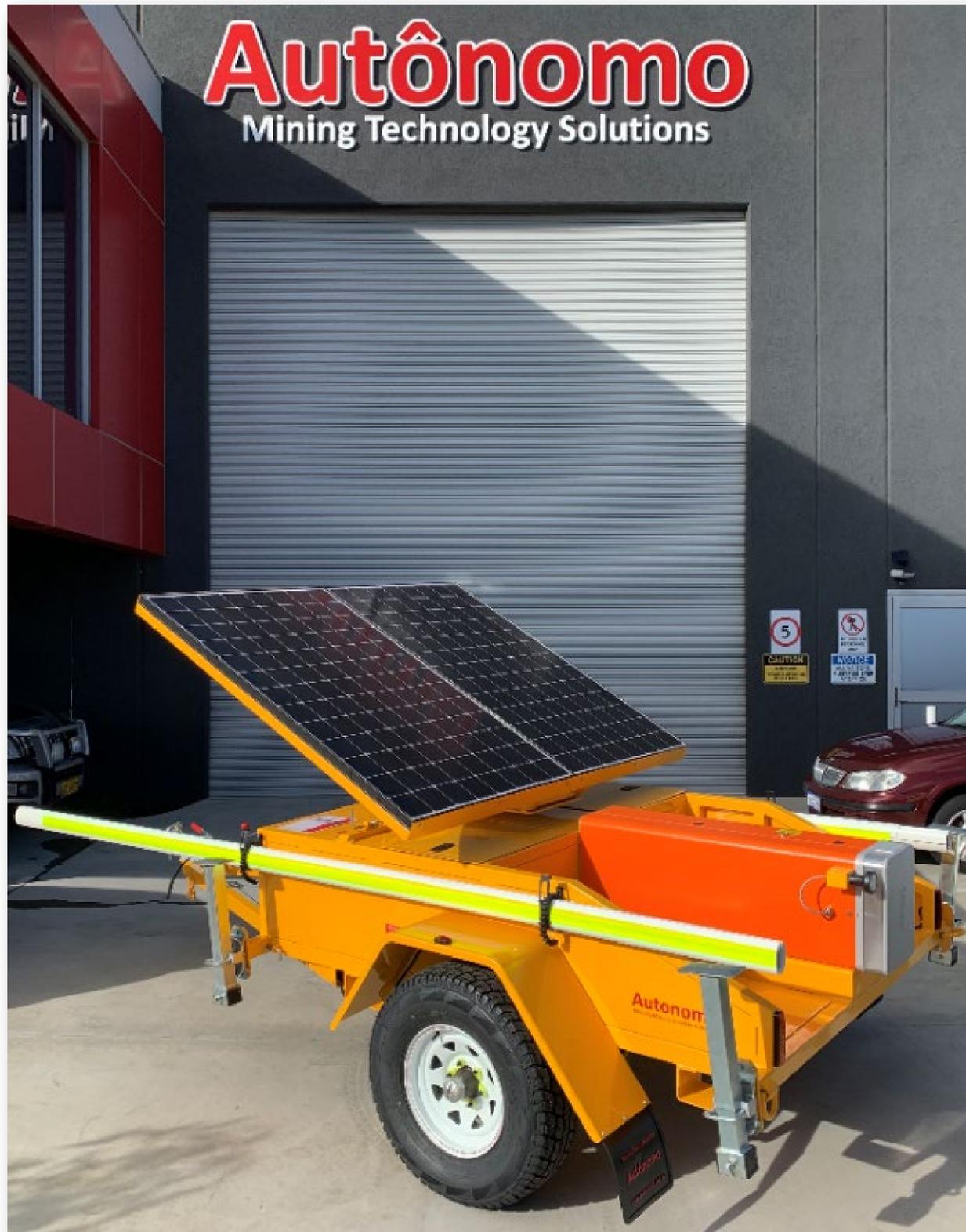
COMUNICATION TRAILERS



AUTONOMO CAN ALSO PROVIDE A 2 X MAST SOLUTION, DESIGNED TO YOUR SPECIFICATIONS, BOTH J-POLE & HEASTOCK



Autônomo Pty Ltd



BOOM GATE TRAILERS

Our boom gate comes in 7 metre or 12 metre sizes.

- Boom gate unit
- Remote activated boom gate
- 2 x 400W SunPower solar panels
- Autônomo's unique rotating solar panel mechanism
- 4 x outriggers
- 4 x Ritar batteries
- Safety decals as required by risk assessment & mine specifications
- Camera pole, height made to customer requirements
- Radar sensor for boom
- Forklift slippers & tiedowns
- All electrical components are compliant to Australian standards

Boom gates can be allocated to both trailers or skids.



CASE STUDIES

ROY HILL BOOM GATES

Project scope: Autonomo was commissioned to design, assess and integrate a boom gate solution to Roy Hill's command system.

These products are now used in all Autonomous access control areas on the mine site with reliable success.



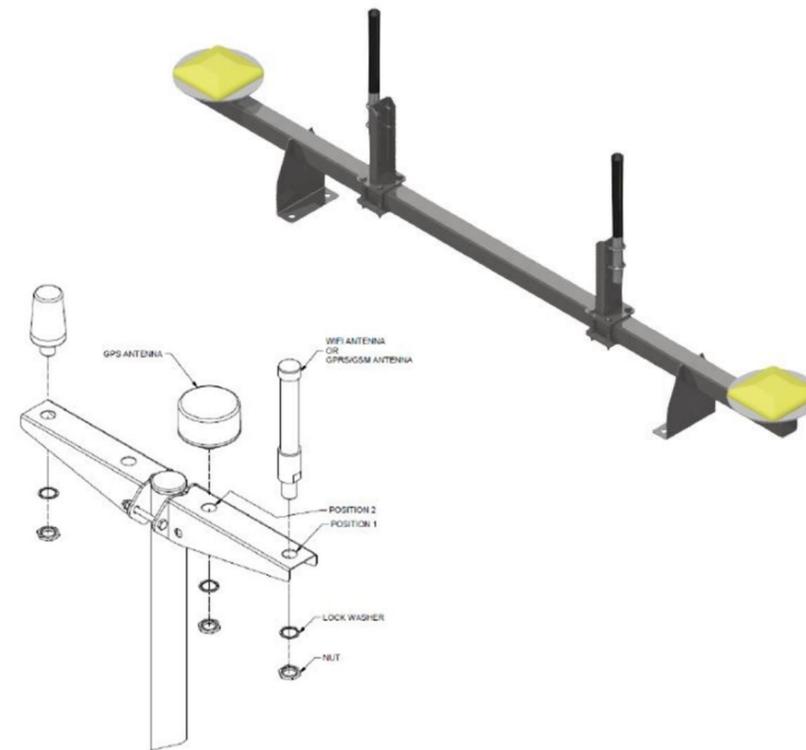
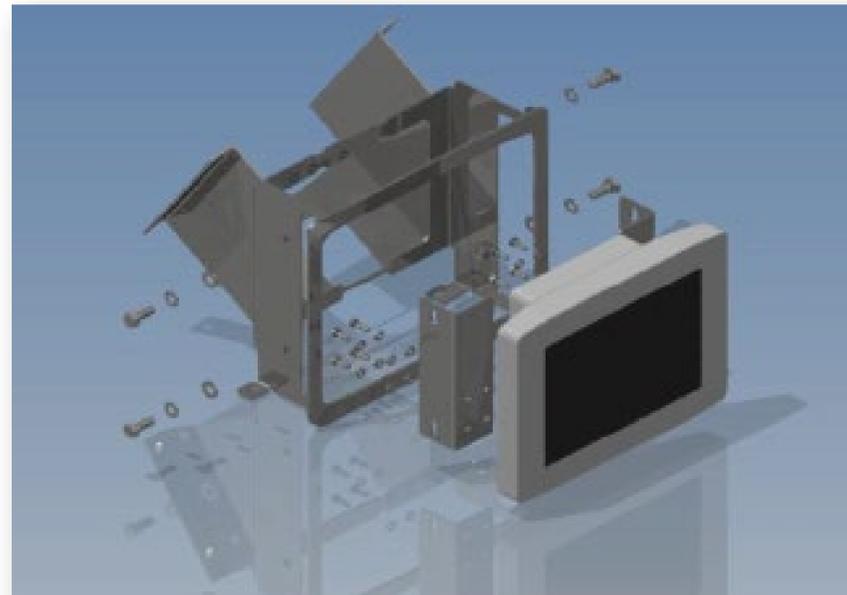


BOOM GATE SKIDS

Autônomo is excited to share with you our fixed boom gates.

This solution can be hardwired into place or made mobile on skids.

- 7m Boom gate
- Sick Radar (now standard)
- Dual communication / pairing to made 15m boom spanning
- Customised set up for client
- 4 x Outriggers
- 4 x Ritar Batteries
- Safety decals as required by risk assessment & mine specifications
- Camera pole, height made to customer requirements
- Radar Sensor for boom
- Forklift slippers & tiedowns
- All electrical components are compliant to Australian standards



ENGINEERING & DEVELOPMENT

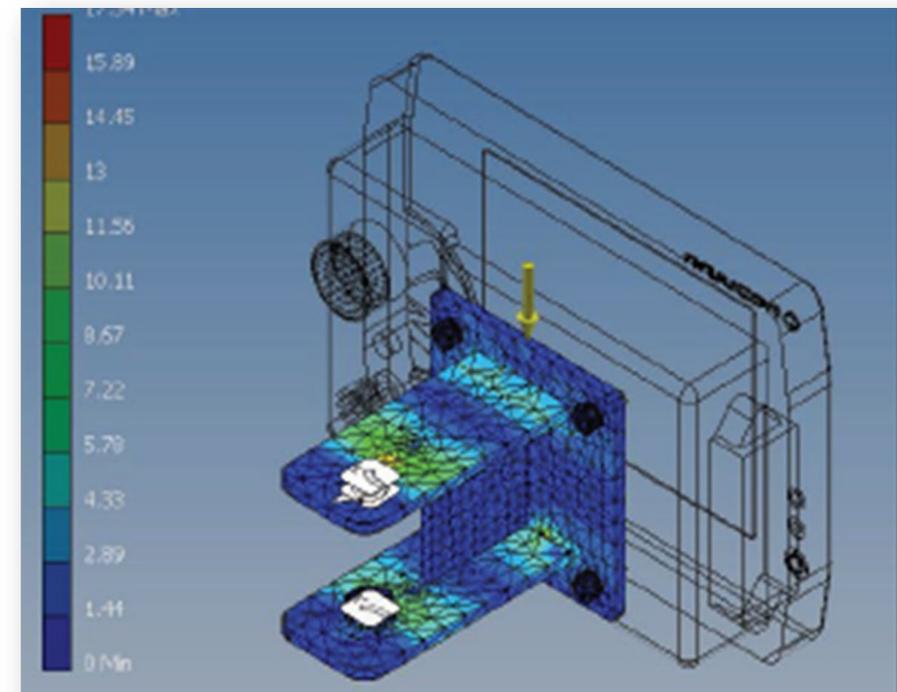
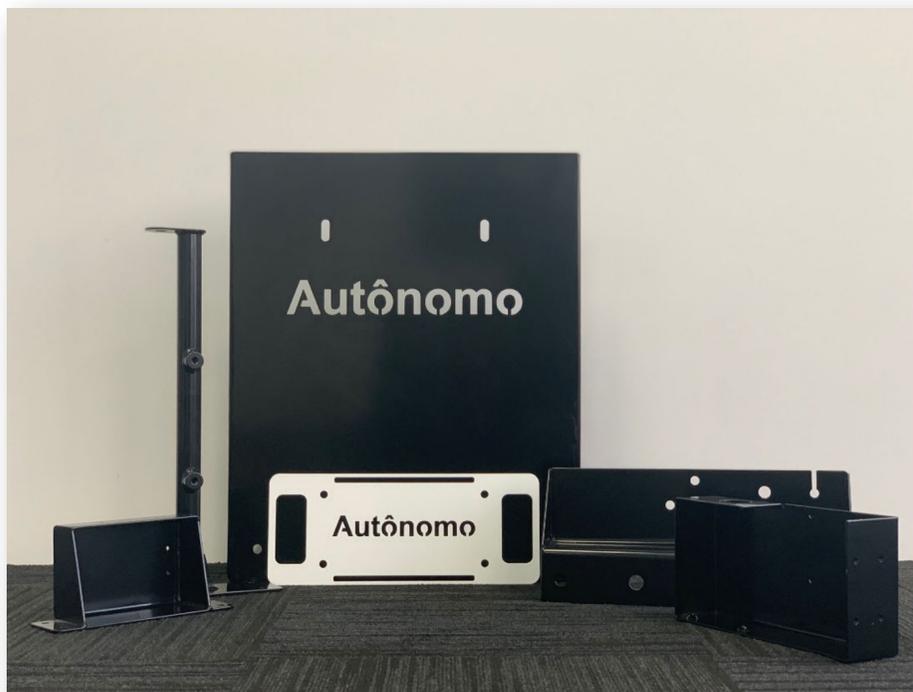
At Autônomo, we provide the technical knowledge and hands on ability to get a product to our clients. We provide engineering design, fabrication, installation and commissioning. All our solutions are designed to client specifications.

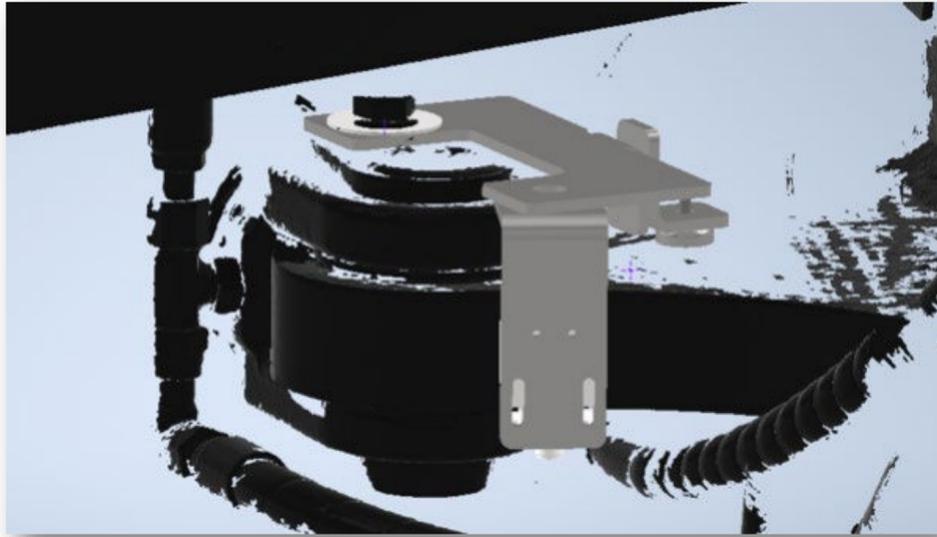
To ensure that our custom bracketry's are a perfect fit, we can model up all components to provide a complete assembly which includes electrical components, fasteners, brackets and wiring representations.

All our bracketry is designed to fit into custom spaces and existing mounting holes. This creates a seamless integration between technology and hardware.

Standard engineering tools can be used on all our brackets to ensure that they are built to last. Such tools as Finite Element Analysis (FEA) can be carried out on all our designs to ensure durability in the harshest environments.

Material selection can be undertaken at the design stage to optimize your vision, reduce weight and save cost. A bill of materials can then be derived to provide accurate quoting and inventory management.



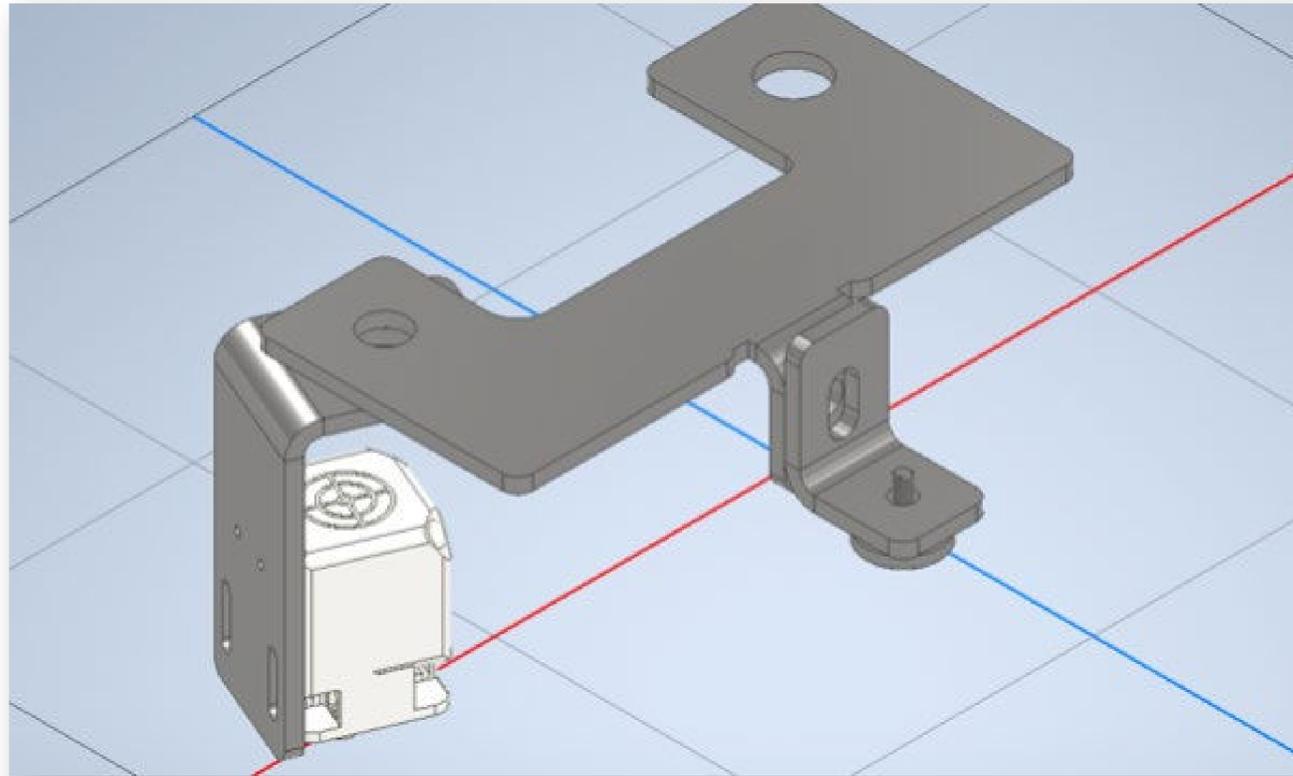


DEVELOPMENT TO DELIVERY



AT AUTONOMO OUR SPECIALISED TEAM CAN SCOPE, DESIGN, 3D SCAN ASSETS, 3D PRINT BRACKETS, AND TEST FIT AND INSTALL ALL OF YOUR BACKERTY NEEDS.

WE GET IT RIGHT THE FIRST TIME.



CASE STUDIES

ROAD TRAIN SOLUTIONS



Project Scope: Integration & Development of Platooning & Autonomous Road Trains.

Background: Due to increasing wages, lack of truck drivers and management of personnel Mineral Resources has invested into an Autonomous Road Train Solution.

Autonomo was engaged on this project and has allocated a projects team to develop and deliver the project.

Benefits for Platooning & Autonomous

- Fuel control & reduced consumption
- Reduced road damage
- Reduced IR/HR matters on the project
- Increased payload deliverables for the project. Running 24/7
- Reduced payroll
- Reduction in maintenance due to driver control
- FIFO – reduced flight cost & accommodation

<https://www.mineralresources.com.au/news-media/mineral-resources-adds-world-first-automated-road-trains-to-its-haulage-fleet/>

PROJECT MANAGEMENT

AUTONOMOUS ROAD TRAIN PROJECT

Autonomo can deliver small- and large-scale projects with reliability and to the highest quality.

Autonomo is current working with Hexagon on delivering the installation, engineering and site services for the autonomous road train project.

- 120 x Road trains
- 360 x Trailers
- 240 x Dollies

Increasing skilled labor by forty-five team members.



CASE STUDIES

FMG AUTONOMOUS VEHICLE



Project Scope: Building FMG / Hexagon Autonomous Light Vehicle Fleet.

At Autônomo, we have been very fortunate to be working along side business leaders in the technology sector.

Our capabilities to work with our partners, project manage and understanding of the technology fundamentals. This has seen Autônomo support the installation and development of the Fortescue Metal Group (FMG) / Hexagon light vehicles.

We continue to support our clients throughout the testing, calibration and programming.

<https://www.miningnews.net/innovation/news/1404738/fmg-rolls-out-autonomous-light-vehicles>

CASE STUDIES

EMV / UE UPGRADE



Project Scope: West Angela's Project – EMV / UE Upgrade

Background: In order for Light Vehicles (LME) and Heavy Mining Equipment (HME) to operate safely in a Komatsu FrontRunner autonomous pit, they must be fitted with the Equipped Manned Vehicle Kits (EMV kits). The key functionality of the EMV kit is to make non-autonomous manned equipment visible to Autonomous Trucks (AT) and additionally, it enables equipment operators to interact with AT's. This is in addition to a suite of other safety functionality that the FrontRunner EMV kits provide e.g., safety envelopes, safety bubbles and Emergency Stop button (E-Stop).

Autônomo undertook this nine-month project consisting of sixteen technicians, 190 alternative mobile assets, and completed the project on-time and incident free.



CASE STUDIES

BHP / WABTEC COLLISION AVOIDANCE SYSTEM



Autonomo has partnered with Wabtec to implement their Collision Avoidance System (CAS) across BHP's Western Australia Iron Ore (WAIO) operations over a span of four years. This collaboration highlights our commitment to enhancing safety and operational efficiency in one of the world's most significant mining operations.

Integrating CAS for our clients is aimed to significantly reduce collision risks and improve overall safety in the workplace, demonstrating our dedication to delivering cutting-edge solutions and supporting our clients' operational excellence.



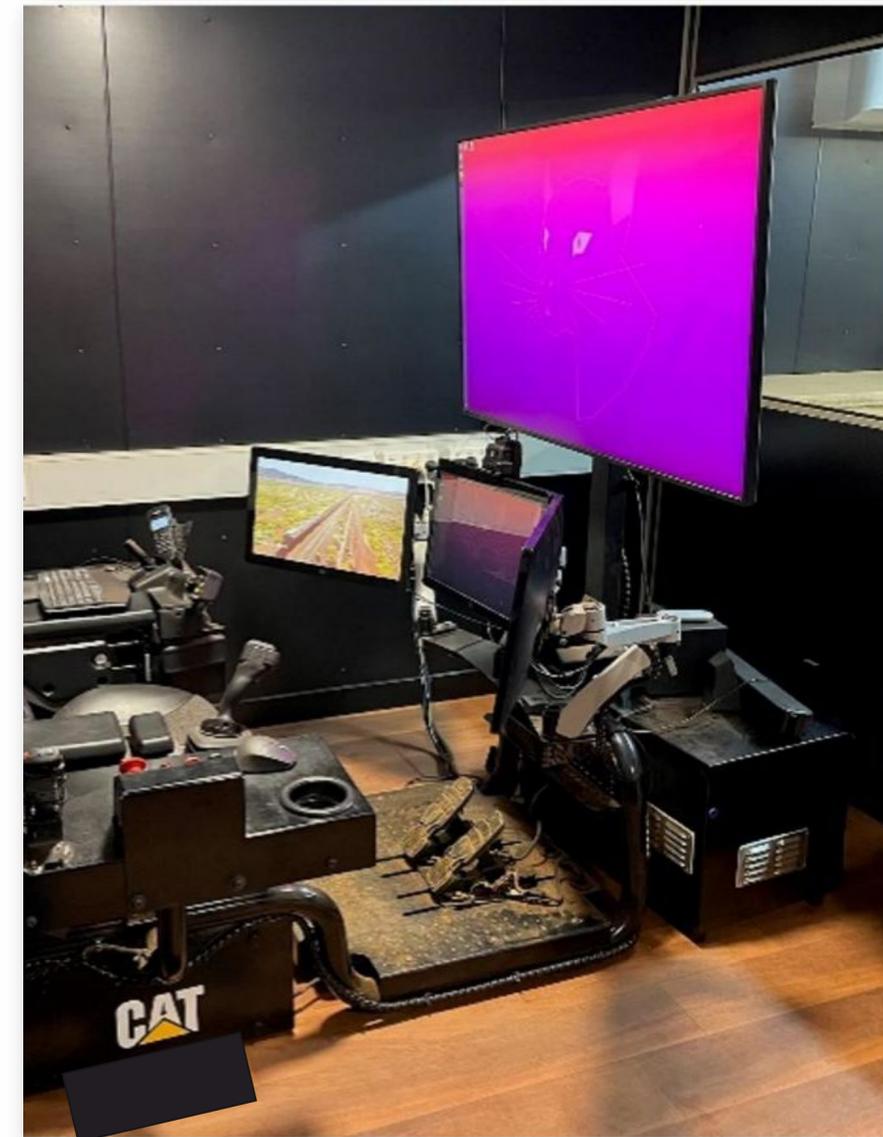
CASE STUDIES

NLOS – COMMAND FOR DOZERS

Autonomo collaborated with Fortescue to enhance their command for dozing remote operating stations (ROS).

This upgrade has significantly improved safety by allowing dozers to be operated remotely in high-risk areas, thereby minimizing operator exposure to hazardous conditions.

The implementation underscores our commitment to advancing safety and operational efficiency through innovative technology solutions





CASE STUDIES

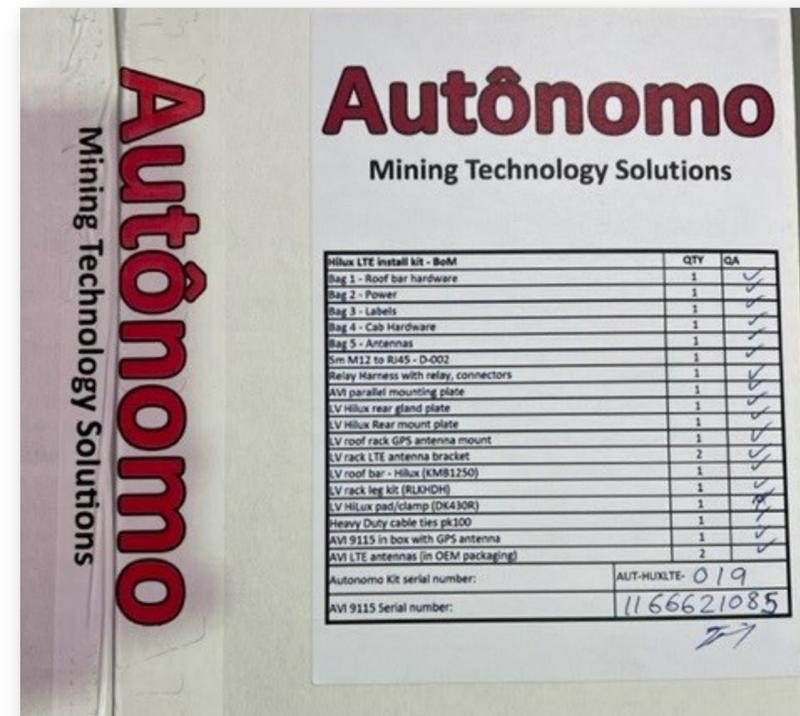
FLEET MANAGEMENT SYSTEMS

Autonomo has extensive experience working with all Tier 1 miners to install Fleet Management Systems (FMS).

We are proficient with a range of systems, including CAT, Modular, and Frontrunner. Our expertise ensures that we can deliver seamless integrations and optimize the performance of these advanced technologies to enhance operational efficiency and productivity.

CASE STUDIES

TECHNOLOGY INSTALL KITS



Project Scope: 430 Assets Roy Hill LTE (HME / LME) Upgrade

Background: Autônomo was awarded the Roy Hill – full fleet LTE Update.

From scoping all asset types, 3D scanning, design, 3D modelling brackets, developing installation standards, BoM lists, fabrication of brackets, completed installation / as built documents, provision of QA/QC completed installation technology 430 kits, project management, and LTE installation resources for twenty-four months.

Project completed on time and injury free.

THANK YOU

