

NAUTITECH
DEVOTED TO SOLUTIONS IN HAZARDOUS AREAS

SPITFIRE™



NAUTITECH
DEVOTED TO SOLUTIONS IN HAZARDOUS AREAS

**METHANE
MASTER**
by Nautitech



RANGER



THERMALCAMERA
by NAUTITECH

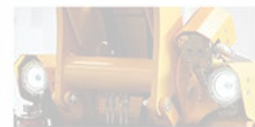


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**SUPER
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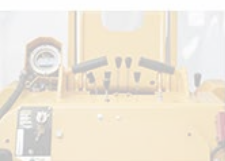
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WHO WE ARE

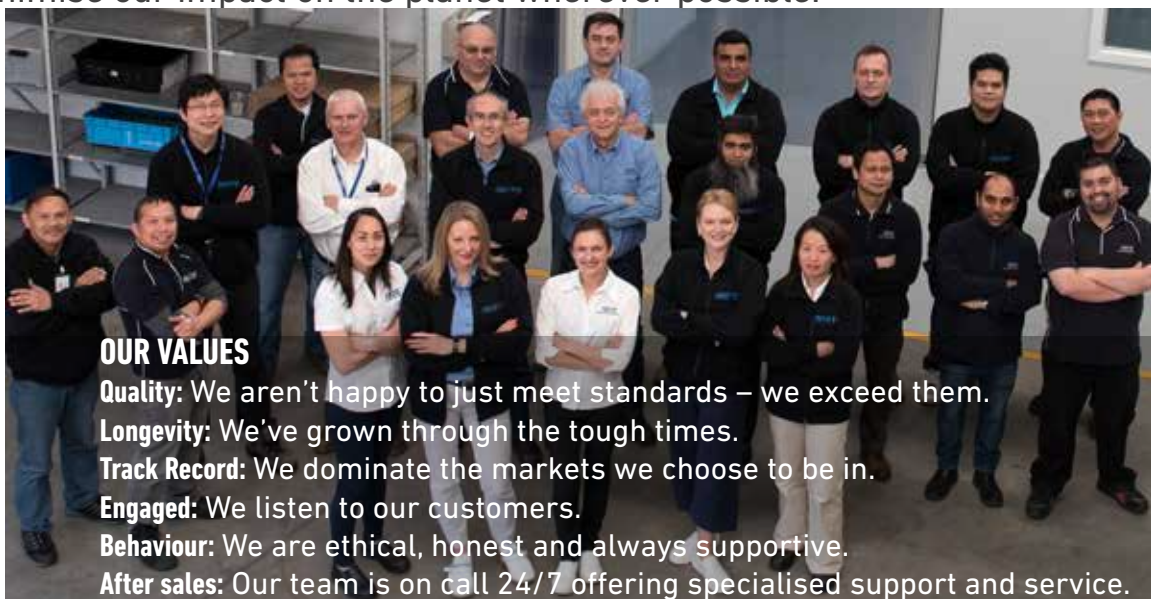
From a 2 man start-up in 2004, Nautitech employs 35 people, with a global reach. Our standards for **quality, safety and reliability** are a benchmark for the industry. With the company goal of raising the bar on innovation, manufacturing and integrity. We aim to be **first in everything we do**, and we back ourselves with the very best servicing and customer support.



OUR CULTURE

At Nautitech we have an open door policy, where everyone is treated with respect and individual skills are nurtured. Our openness leads to **great collaborations** both internally and with our external partners.

We are **passionate about innovation** and make sure we put the right people in the right place at the right time, employing only the best of the best to design and engineer our solutions. We minimise our impact on the planet wherever possible.



OUR VALUES

Quality: We aren't happy to just meet standards – we exceed them.

Longevity: We've grown through the tough times.

Track Record: We dominate the markets we choose to be in.

Engaged: We listen to our customers.

Behaviour: We are ethical, honest and always supportive.

After sales: Our team is on call 24/7 offering specialised support and service.

'UNDERGROUND INTERNET OF THINGS' (UIoTS)

At Nautitech we develop and base our solutions around our underground internet of things 'UIoTs' business model. Our industry leading Spitfire BPLM continues to reach new heights every day, connecting real time data from the face, to the surface.

Safety for workers is the obvious but not the only benefit from improved communication systems. Using the best system on the market - the Spitfire - enables all data collected via our gas detection shutdown systems and sensors, award winning HD and thermal cameras, and data logger (Profiler) to be sent in real time to the surface. This allows two way communications, control of equipment, and the ability to monitor operations and performance like never before.

OUR MISSION

To create a competitive advantage for our customers.

ENGINEERING

Our customers are at the heart of everything we do, including our R&D process. Relentless market research and close customer interaction enables us to engineer what is needed to give our customers a competitive advantage.

SUPPORT

Production & technical support

- Manufacturability optimisation: Comprehensive data packs
- BOM (alternative part numbers, alternative suppliers)
- User manual
- Assembly instruction
- Test instruction and certificate

CONCEPT DESIGN

- Specification development
- Concept diagrams
- Project proposals
- Evaluation & examination

HARDWARE DEVELOPMENT

Schematic Design:

- Altium designer
- Power analysis
- Analogue, digital and power

HARDWARE

PCB Design:

- Simple to multi layer
 - 3D modulation
- Full 3D Mechanical & Spice integration is used to ensure seamless flow design

MECHANICAL DESIGN

(Solidworks)

- 3D Modelling & 3D printing
- Sheet metal enclosures: designed in house, sub-contracted production
- Label Design: printed in house

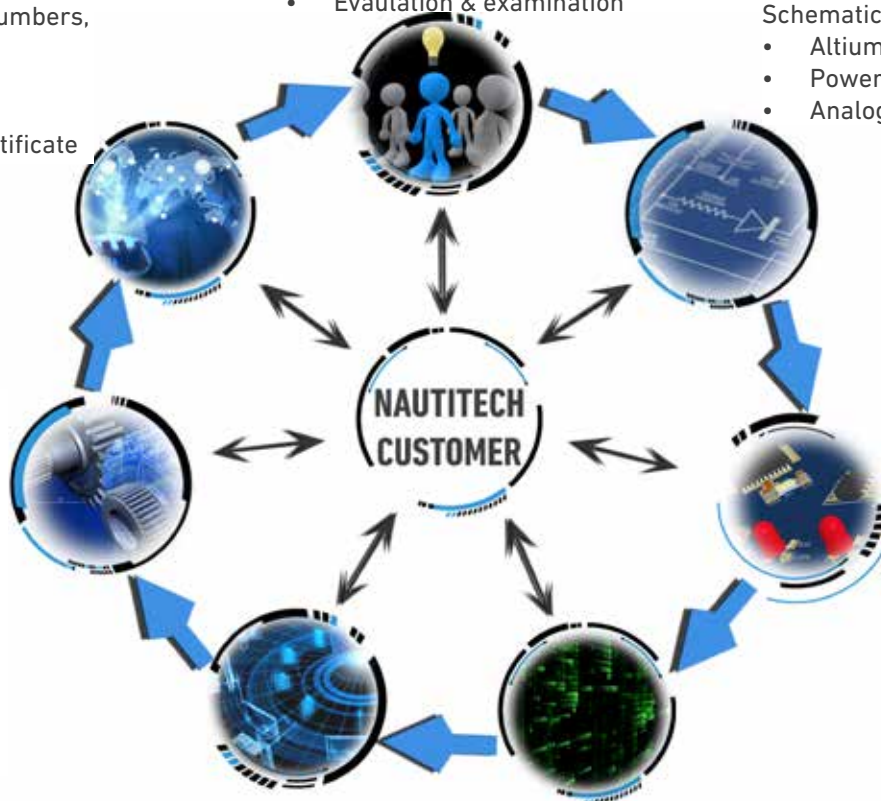
SOFTWARE DEVELOPMENT

- Application based development: Windows and Linux based
- Database design and maintenance: MySQL, Dbase, Oracle to name a few
- Web based Development
- Android and IOS Development

FIRMWARE DEVELOPMENT

Nautitech has experience with a variety of embedded processors. We utilise RTOS, CAN-Open and various other protocols to ensure fully capable growth and OEM interface.

- Microchips family
- ST - Cortex Family
- IMx6
- GNU - Compiler range



ADDITIONAL ENGINEERING EXPERIENCE

- Intrinsic Safe Designs topology
- Boot-loaders: USB, CAN, UART, SD Card
- Communication protocols: CAN Bus, USART, SPI, I2C, Ethernet, IrDA
- RFID (125kHz, 13.5MHz, 433MHz): Access control (Passive), Asset management (Active and passive)
- Single board computers: Windows embedded, Linux, Android
- Video technology: Thermal Imaging; display, human detection
High Definition Imaging

PRODUCTION

Nautitech is not only an innovator, but is also extremely self-sufficient and fiercely Australian. We have a great team of people who are members of projects within our **Six Sigma** and **LEAN programs**. Our capabilities mean we can do anything and everything in house, within these main areas:



Electrical Workshop

- Nautitech has its own PCB population production line (stencil printer, Pick & Place machine, Vapour oven). We are able to populate any PCB with an assembly production line such as; automated soldering paste to Stencil printer; automated component placement; and soldering inside the vapour oven.
- Our AOI (automatic optical inspection station) gives us a high level of quality control as it can inspect soldering, presence, polarity and component verification.
- We have 9 Electronic Assembly stations in a specially designed room with electrostatic protection throughout the process.



Mechanical Workshop

- CNC machine provides in-house precision metal processing.
- Injection moulding machine – we are capable of doing plastic injection.
- Our 3D printer is mostly used by our Engineering group, but production also utilise this great innovation to speed our processes up.
- Our large mechanical workshop offers great assembly and repair facilities for all of our products whether a new build or a code repair.



Test Stations and Accreditations

- Automated test stations are common across all of our product range.
- Operational test of our equipment is conducted utilising our computerised and customised automated test stations. Printed test reports are available, and a complete record kept of all manufacturing.
- Environmental chamber – used for stress testing of our equipment. Temperature range from -20degC to +140degC.



Quality Management System

We have an integrated management system that covers not only our Quality Management but also our WHS and Environmental responsibilities.

We are:

- NATA certified
- ISO – 9000 Accredited
- IECEx registered workshop.
- Mechanical workshop

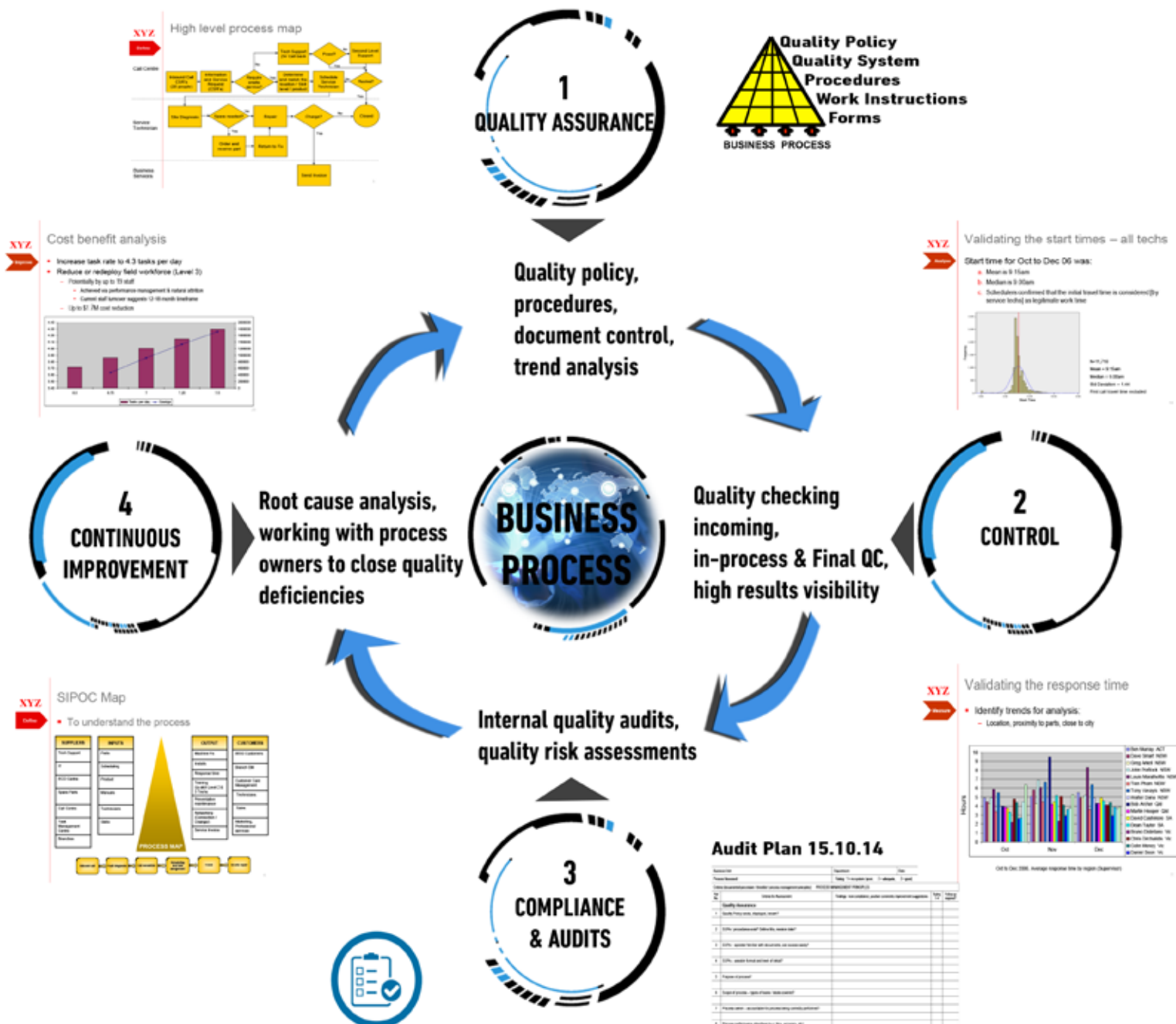


These certifications allow us to manufacture and repair all of our equipment in house. We feel this gives us a competitive advantage over our rivals, as we feel only Nautitech people can give our products the care and attention we feel is required by the industry.

QUALITY - WHAT IS IT?

For us, quality is a process outcome meeting all customer expectations. We employ a harmonised approach to best practise, less waste, faster cycle times, improved efficiency, decisions driven by data - not opinions, significantly lower defect rates and increased staff morale.

NAUTITECH'S QUALITY MANAGEMENT SYSTEM



SERVICE & SUPPORT

Nautitech provides a full support service for any customer such as:

- Installation of all systems
- Training of the customers staff
- Provision of manuals
- Fault finding
- Code and 3800 work
- Quotes for new systems

We have 4 customer support staff at work in NSW & QLD, a BDM, & 3 field technicians

INSTALL OF SYSTEMS

Installation can be done at any mine site or service centre. Nautitech personnel are fully qualified and have the required licences for onsite work. For peace of mind and likely the cheapest way to install Nautitech equipment, try our service people.

TRAINING & MANUALS

We believe in a **“Learn by Doing”** approach, this means people are not sitting in classrooms going through case studies or theory. Rather they are encouraged to take a hands on view of the world. Making the training real for the people receiving it, and relevant to what they will need to know about the systems and their operation. Manuals are provided during the training and while they may be referred to, the manuals are mainly for the operators to review afterwards.

FAULT FINDING

Nautitech systems are renowned for their reliability and ease of use. However, there are occasions when field technicians need some guidance. Our team is available for telephone conferencing, Skype, and site visits.

CODE & 3800 WORK

We are always available to assist. This includes the entire product's lifecycle and its renewal. As Nautitech systems are externally SIL rated, we advise Nautitech's involvement wherever possible in service and code work to ensure the correct maintenance schedule and parts are always adhered to.

COLLABORATION

Our service team also have a big say in R&D, bringing their vast knowledge of our customers needs. The design and development of a system for a KANGA mini loader is a great example of this pragmatic approach to getting things done.



KANGA

Nautitech installed:

- 5 temperature sensors
 - 1 pressure sensor
 - Engine Management
 - Data logger (PROFILER)
 - Lights
 - Full turn key retrofit
- Kanga is now AS4871 Rated

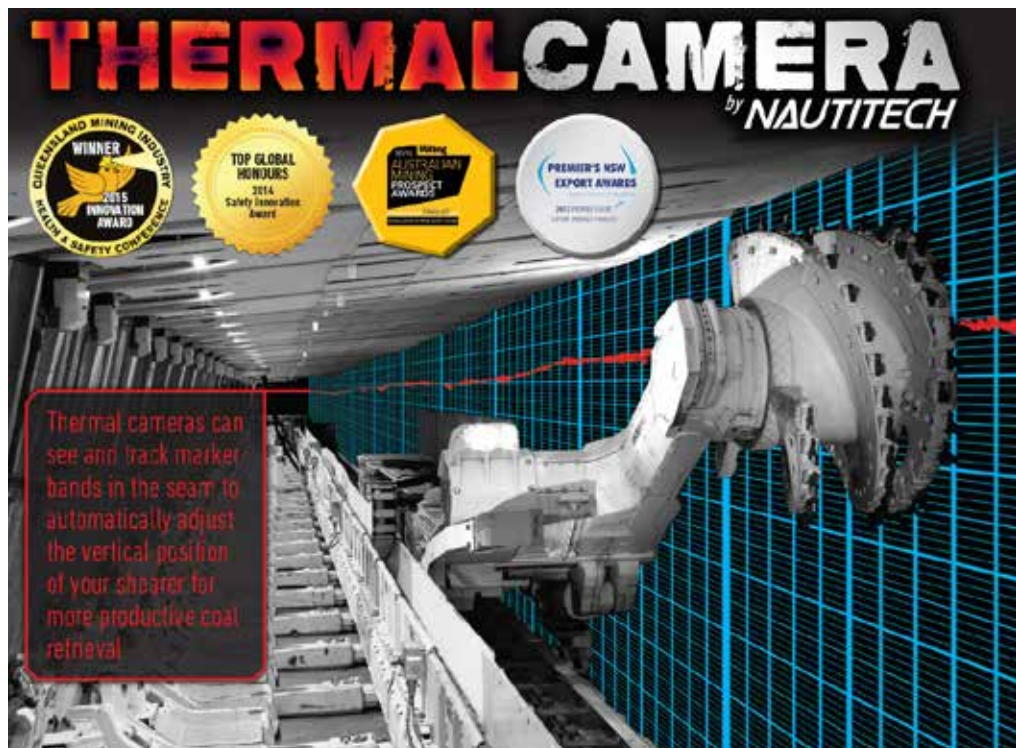
COLLABORATIONS

Nautitech collaborates with many different institutions and organisations. We feel that collaboration is the key to success, as it is difficult for one company to achieve true greatness on its own. Throughout all our collaborations, the main objective is to provide the solution the customer is looking for at the right price and quality.



The CSIRO is a fantastic organisation to work with. We have collaborated on different levels and multiple projects. We have a mutual understanding and trusting relationship which is demonstrated when CSIRO recommend Nautitech products to work in conjunction with its own developments. Nautitech's Thermal and HD cameras, for instance in alliance with its Spitfire modems is leading the charge when it comes to autonomous mining of the Longwall, a particularly hazardous areas for mine workers.

UTS have provided Nautitech with several students over the last couple of years. We are happy to have contributed positively to their budding careers. We have also been heavily involved with them on the R&D side of things, utilising their skills for two meaningful projects for Nautitech's future growth.



Saminco is Nautitech's partner in South Africa, North America and Australia. This relationship with another METS (Mining, Equipment, Technology & Services) company, who share our values, has been growing strong for over three years. Nautitech is the sales and service provider in Australia for Saminco, and Saminco reciprocate in their own strongholds. Nautitech and Saminco jointly displayed at the International Mining Expo in Las Vegas in September, 2016.

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