

YOKOGAWA 

Co-innovating tomorrow™

Yokogawa Australia & New Zealand
Corporate Overview



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About Yokogawa

The Yokogawa Group traces its history back to the establishment on September 1st, 1915 of an electric meter research institute in the Shibuya district of Tokyo. Ever since, Yokogawa has continued to expand its business, focusing mainly on the measurement, control and information technology fields. Taking the initiative to constantly transform itself in response to dramatic social and economic change, the Company has established an impressive track record of continuous expansion while contributing to the growth and development of industry and society in general, through solutions.

Today, Yokogawa has become a global leader in the Industrial automation and control field with a Group-wide workforce of over 18,000 dedicated employees.

Yokogawa is working to resolve social issues through business activities with the aim of contributing to society and to a sustainable global environment.

THE YOKOGAWA PHILOSOPHY

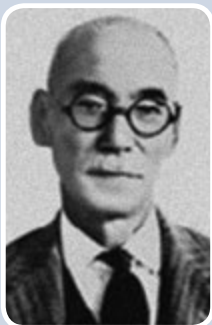
As a company, our goal is to contribute to society through broad ranging activities in the areas of measurement, control and automation.

Individually, we aim to combine good citizenship with the courage to innovate

Contribution
To Society

Pioneering
Spirit

Quality
First



FOUNDERS ASPIRATIONS

In his instructions to Ichiro Yokogawa and Shin Aoki, Dr. Tamisuke Yokogawa said, "You don't need to worry about profits. Just learn and improve our technology. You must make products that earn us the respect of our customers." This is the origin of the founding principles that have been handed down for a century as the pioneering spirit.

Although first set into words in 1988, the Yokogawa Philosophy is based on these founding principles, and is embodied in the code of conduct that guides employees in the performance of their daily tasks and in all pronouncements on our corporate objectives.

Co-innovating tomorrow[®]

Co-innovating conveys our determination to continually engage in the co-creation of value with our clients by working with them in long-term partnerships to develop solutions, moving steadily into the future, one step at a time (*tomorrow*). It is a promise to our clients, markets, and society – and to ourselves. By engaging in process co-innovation with clients and society, Yokogawa creates value for a brighter tomorrow.

A key Yokogawa principle in supporting organisations is the agility to rapidly and effectively co-develop solutions to the most complex of challenges. Be this on new developments, expansions or refurbishments, our Co-innovating tomorrow philosophy is inherent in our culture and designed to ensure the co-creation of value for our clients. This not only ensures the latest and most applicable technology is employed, but also matches the specific needs of our clients for highly reliable, efficient and safe operations.

YOKOGAWA TIMELINE OF EVENTS

1915	Dr. Tamisuke Yokogawa established an electric meter research institute in Shibuya, Tokyo
1917	First to produce and sell electric meters in Japan
1920	Incorporated as Yokogawa Electric Works Ltd.
1933	Started research and manufacture of aircraft instruments and flow, temperature, and pressure controllers
1955	Signed a technical assistance agreement for industrial instruments with Foxboro, USA
1957	Established Yokogawa Electric Works, Inc. as North American sales office
1964	Made a full-scale entry into the industrial analyzer market
1974	Established Yokogawa Electric Singapore Pte. Ltd. as Singapore plant
1975	Established Yokogawa Electric (Europe) B.V. as European sales office
1983	Released CENTUM, the world's first distributed control system
1986	Formed Yokogawa Hokushin Electric Corp. through merger with Hokushin Electric Works, Ltd.
1988	Changed the Company name to Yokogawa Electric Corporation
1989	Yokogawa Australia founded as a wholly owned subsidiary of Yokogawa Electric Company
1999	Yokogawa New Zealand founded as a wholly owned subsidiary of Yokogawa Electric Company
2002	Entered the high-frequency measuring instrument business Acquired 100% of Ando Electric's stock
2010	Transferred the measuring instruments business to Yokogawa Meters & Instruments
2013	Formed Yokogawa Solution Service Corporation to handle sales, engineering, and services for the Japan industrial automation business
2015	Celebrated the Company's 100th anniversary
2016	Acquired KBC Advanced Technologies plc
2018	Announced Transformation 2020 mid-term business plan

Yokogawa Australia & New Zealand

Yokogawa Australia & New Zealand are an energetic, forward thinking, engineering and service focused organisation, with a range of class leading products and detailed application knowledge. This has seen us selected as the automation, safety, data management and instrument vendor of choice to deliver many critical projects within the region. We have been contributing to the growth and success of Australian and New Zealand industry for over 30 years, touching the lives of every day citizens and helping to make our countries better places to live.



As an organisation, our goal is to contribute to society through broad-ranging activities in the areas of measurement, control, and information. Individually, we aim to combine good citizenship with the courage to innovate. We are conscious of our role in supporting our people, our customers people and their communities. Through working with institutes, associations and educational institutions, we not only support them in keeping abreast of the latest technologies, but also provide opportunities to enter the field of process control, safety and instrumentation.

We are recognised for our ability to meet the most demanding of schedules, often on applications that test the limits of conventional platforms and expertise. This is only possible due to the depth and range of our engineering skills and through working closely with our customers. With warehouse facilities in Sydney and Christchurch, we also stock a range of fast moving and specialist products which are critical to the ongoing process availability of our customers.

Our Advanced Solutions Group provides consultancy services, software, edge and cloud-based analytic solutions. We identify root cause of customer site issues and/or potential process improvement, recommend a mutually beneficial method of implementation, then deliver a cost-effective resolution.





OUR PEOPLE, YOUR STRENGTH

Yokogawa Australia and New Zealand take pride in the quality and capabilities of its employees, with over 2000 years of accumulated service within the regional organisation and an emphasis on personal development. Not only do we retain the best minds within the organisation, we also develop next generation and graduate engineers. This ensures we combine the best aspects of new and emerging technologies and thought processes with experience gained over many decades of working within the process industries. Underpinning this are a group of highly qualified and experienced Subject Matter Experts (SME's), who provide an advanced level of understanding on a range of critical technology and implementation topics. This is further enhanced through the continuous development of our engineers through the 'Yokogawa Certified Engineer' programme, ensuring skills always remain current.

We believe our approach extends the quality and reliability aspects beyond our product portfolio to its people, ensuring a complete customer service experience.



INDIGENOUS PEOPLES POLICY - OUR COMMITMENT

Yokogawa Australia & New Zealand recognises the rich cultural history of our Aboriginal, Torres Strait, Maori and Pacific Islands people. Indigenous cultures in Australia, New Zealand and the Pacific Islands are some of the oldest living cultural history in the world. We thank and pay our respects to the Elders both past and present for nurturing the land and sea we now work and live on.

Yokogawa Australia & New Zealand is committed to the advancement, development and growth of our Aboriginal, Torres Strait, Maori and Pacific Islands people. We are committed to increasing Yokogawa Australia & New Zealand's positioning as a leader in Indigenous practices.

Yokogawa's vision is to provide a workplace that is free from discrimination and supportive of the value that cultural difference brings to the organisation. We aim to adopt all cultures into a united Yokogawa Australian & New Zealand culture and recognise the importance that Indigenous people play as the traditional custodians of the land.

SUSTAINABILITY

With customers in diverse industries, including Energy, Chemicals, Mining, Water and Food & Beverage, as well as businesses that support social infrastructure, Yokogawa is fulfilling a crucial role in efforts to realise a sustainable society. We contribute to a sustainable society for the benefit of future generations by resolving customers issues through our business while striking a healthy balance between environmental, social and economic aspects.



Yokogawa has been included in the 2019 Global 100 Most Sustainable Corporations in the World Index. This is Yokogawa's first time on the Global 100, one of the world's leading sustainability indices. Now in its 15th year, the 2019 Global 100 was disclosed in Davos on January 22nd by Corporate Knights, a Canadian media and research company focused on clean capitalism, to coincide with the World Economic Forum. To determine the 2019 ranking, Corporate Knights undertook a rigorous analysis of more than 7,500 companies with US\$1B+ in revenues against global industry peers on a suite of up to 21 quantitative key performance indicators, weighted to reflect each industry's impact profile. Yokogawa was ranked in the top 25% in both the clean revenue and innovation capacity categories.

In its core industrial automation and control business, Yokogawa works with customers in the energy, chemical, iron and steel, water, and other industries to improve production efficiency and stability, reduce CO₂ emissions and resource use, and ensure workplace safety. In 2018, the company established its life innovation business headquarters to deliver new solutions for the food and pharmaceutical industries and contribute toward a healthy and abundant society.

PRESS RELEASE:

Yokogawa Joins Global 100 Most Sustainable Corporations in the World Index

Yokogawa Electric Corporation (TOKYO: 6841) announces that it has been included in the 2019 Global 100 Most Sustainable Corporations in the World Index (Global 100). This is Yokogawa's first time on the Global 100, one of the world's leading sustainability indices.

Now in its 15th year, the 2019 Global 100 was disclosed in Davos on January 22nd by Corporate Knights, a Canadian media and research company focused on clean capitalism, to coincide with the World Economic Forum.

To determine the 2019 ranking, Corporate Knights undertook rigorous analysis of more than 7,500 companies with US\$1B+ in revenues against global industry peers on a suite of 30 sustainability performance indicators, weighted to reflect each industry's

SAFETY, QUALITY & RELIABILITY

Ever since the foundation of the company, putting quality first has been a fundamental principle of Yokogawa. This customer focused quality management has fuelled Yokogawa's development. Guided by the quality first principle, Yokogawa autonomously implant quality. Such a philosophy has led to our reputation in the process industries being synonymous with quality and reliability. Customers asked why they choose Yokogawa regularly use phrases such as "fit and forget", "bullet proof" and "tough as teak" to describe our reputation as an organisation whose products can be relied on even in the toughest of industrial environments.

Yokogawa is committed to strong Occupational Health & Safety (OHS) principles, actively promoting the importance of health and safety with its employees. Through initiatives to reduce and eliminate potential OHS risks, we are working to enhance the quality of occupational health and safety step by important step.



Yokogawa has a commitment to both quality and safety. Therefore, Yokogawa pursues certification by the leading global bodies. Yokogawa currently is certified to: Quality Management System AS/NZS ISO 9001:2015 Certified by Lloyds Register Occupational Health & Safety Management System OHSAS 18001:2007 AS/NZS 4801:2001 Certified by Lloyds Register



Quality in every aspect begins with the mind



Technology Driving Sustainable Growth

Synaptic Business Automation™

The speed of change in our business environment is becoming more and more intense. Industrial organisations are facing numerous challenges, such as global competition, changing regulatory requirements, cyber security challenges, skills shortages and an aging workforce. There is a need for greater visibility of processes to address such challenges, thus providing a platform to act with agility and proactively manage change.

Synaptic Business Automation creates sustainable value by intelligently connecting everything in our customers' organisation. To realise this, Yokogawa integrates its business and domain knowledge with digital automation technologies and co-innovates with customers to drive their business process transformation. To support customers, Yokogawa applies extensive knowledge in Operational Technology (OT), Information Technology (IT) and Business Management through process and business consulting which provides one stop comprehensive solutions from business to operations.

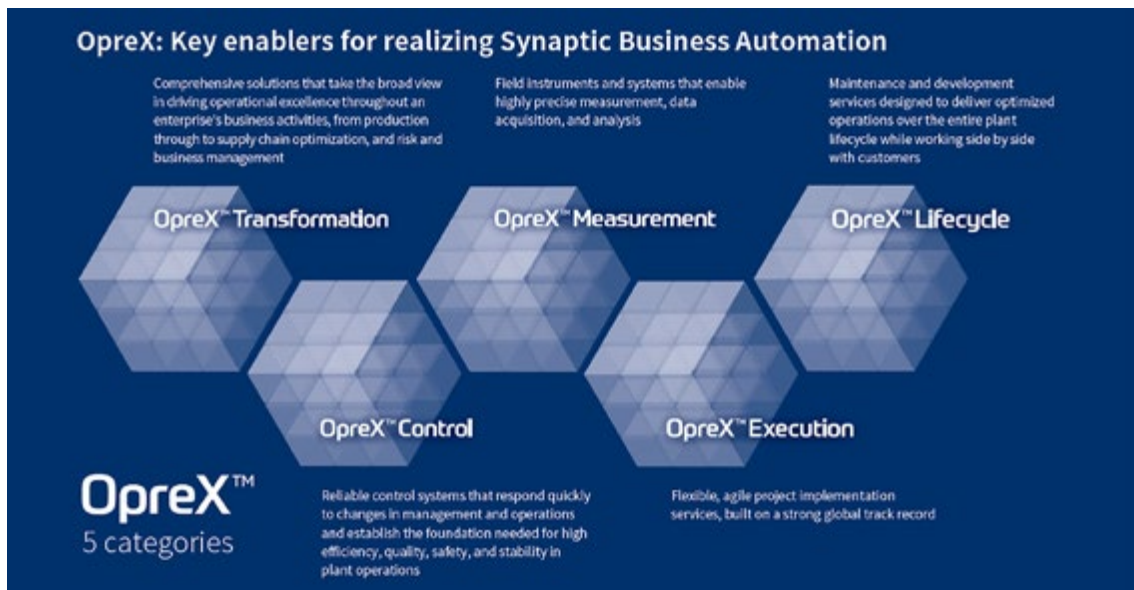


Resilient operation
Manage customers' business risks and improve operational resilience for dealing with HSSE, organizational issues, and regulatory compliance.

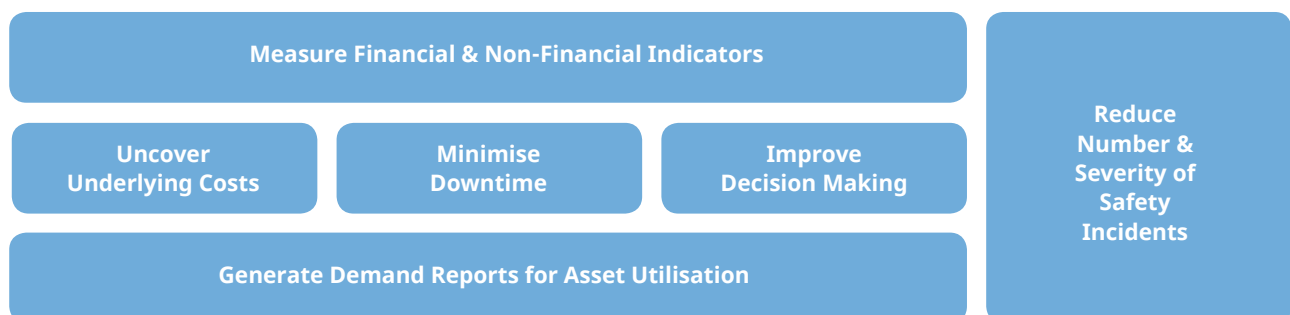
Optimized production
Optimize the total expenditure (TOTEX) components of capital expenditure (CAPEX) and lifecycle operational expenditure (OPEX) throughout the supply chain, and improve reliability, productivity, and profitability.

Business innovation
Co-create new business models that foster manufacturing excellence and drive collaboration with customers and business partners, and introduce environmentally friendly manufacturing practices for a sustainable society.

OpreX™ Profit-driven Operation is a solution for process industries that drives seamless alignment with plant management objectives across the organization, from the operations floor through to the C-suite. The solution is centred on a methodology of interrelated performance indicators distilled from Yokogawa’s extensive domain knowledge and promotes profitability by helping to optimize the balance between conflicting objectives. It incorporates a new performance dashboard and related services designed specifically for the operations level, as well as programs provided by KBC Advanced Technologies, a wholly-owned Yokogawa subsidiary specializing in consulting and simulation for process industry management.



OpreX focuses on the co-creation of customer value, addressing specific needs within the business. Visibility of all aspects of the process can be attained providing high levels of insight from field level to boardroom. Executives can have clarity on process performance allowing them to identify first hand whether their improvement directives are bearing fruit.



Focusing on improving efficiency rather than reacting to and managing an erratic process, OpreX allows a reduction in variability and boost in profitability through knowing which data to ignore and which to act on.

Consulting & Engineering Services

OpreX™ Execution

For 30 years, Yokogawa has been providing products and services in Australia and New Zealand. Yokogawa can provide the engineering services to design, configure, install and commission control systems. We also provide process control improvement and optimisation services to ensure you get the most out of your process plant.

MAIN AUTOMATION & INFORMATION CONTRACTOR (MAIC)

Industries within Australia and New Zealand have looked to Yokogawa to take on the role of main automation contractor (MAC) for many years. With the proliferation of diagnostic information and a growing business reliance on IIOT and enterprise operations, Yokogawa has expanded its offering to clients by integrating 'Information' as part of its MA'I'C philosophy. We now take a more holistic approach to such challenges by taking responsibility for all automation-related, business optimisation/operations and reporting aspects of the project and all their associated data management requirements with our Innovative MAIC Services method of project execution approach.

LOCAL ENGINEERING

Yokogawa engineering consists of highly skilled staff who provide a wide range of services to add value to your system. Design and implementation services include FEED, project execution, cyber security, TUV certified functional safety management, network and system architecture design, advanced modulating design and optimisation. Complimented by wide industry experience, our engineers have an unparalleled level of application design, development and implementation on some of the most complex processes.



CONSULTING SERVICES

With such a significant depth of project and process optimisation experience within Yokogawa Australia & New Zealand, our customers have come to depend on our consultancy services when it comes to plant design and optimisation for control, safety and instrumentation related services. In recent years this has extended to IT/OT convergence, business optimisation and cyber security related challenges as the demands on process and manufacturing companies grow.

Our Subject Matter Experts work collaboratively with customers helping them initially understand the challenge before working to define clear and concise outcomes and a realistic implementation process. The approach complements the customer skillset and enhances their overall knowledge, tapping into more than 2000 years of cumulative project experience within Yokogawa Australia & New Zealand.

PROJECT MANAGEMENT

All Yokogawa project managers are registered & certified by the global Project Management Institute, a leading professional membership association for the project, program and portfolio management profession. All projects are managed using PMI's Project Management Body of Knowledge which provides guidelines to current best practice in delivering projects successfully.

AGILE PROJECT EXECUTION

Agile Project Execution is Yokogawa's innovative and flexible project delivery methodology that utilises the latest available technologies and standard work processes to achieve maximum benefits to the project whilst keeping it off the critical path. The execution strategy employs three key technology concepts namely: Virtualisation, Modularisation and Validation which in turn maximise Schedule Flexibility while reducing Cost and Delivery Risk. This is achieved by moving away from the conventional waterfall project delivery method to a more modularised, decoupled execution strategy using Yokogawa's propriety Systems and Tools.



CONTROL SYSTEM IMPROVEMENT SERVICES

As the first organisation to release a Distributed Control System in 1975, Yokogawa has a wealth of expertise in delivering highly reliable and efficient process automation solutions. In doing so, we continually work with our customers to improve system configuration, control strategies and overall operations to ensure they maximise the return on their investment. Through working with our experienced engineering, technical services and Subject Matter Experts, we can provide a holistic view of your overall process operation performance, while focusing on the individual control elements which directly impact process performance.

PROCESS SAFETY SERVICES

Yokogawa Functional Safety Experts are actively involved in mega-projects, from working in the client's office carrying out SIS Front-End Engineering Design, SIS Realisation & Testing; to site SIS Validation, delivery and completion of commissioning. We ensure worldwide technical competency of our Functional Safety Experts, through a global Yokogawa Competency Profile Management System, which gives Yokogawa the agility to build the optimum safe solution regardless of the size or location of application.

PRODUCTION CONTROL & SAFETY INSTRUMENTED SYSTEMS

OpreX™ Control

We provide our customers with a range of systems that support the safe and efficient operation of their plants and processes. These include highly reliable production control systems for the control and monitoring of plant operations, network-based control systems, programmable logic controllers and safety instrumented systems that are fully integrated with production control systems to achieve the highest levels of safety.

PCS | CENTUM VP

Yokogawa released the world's first Distributed Control System in 1975, CENTUM VP. Now in it's the ninth generation of innovation, the CENTUM series is synonymous with benchmark high availability (99.99999%), life time backward compatibility and tight integration between the controller and human machine interface. With over 27,000 installations across 100 countries these features alone have been providing a high degree of reassurance of zero unplanned downtime, ease of migration and clear visibility and control to mission critical and process intensive industries.



SIS | PROSAFE RS

With global acceptance in over 83 countries, ProSafe-RS Safety Instrumented System (SIS) moves beyond the traditional standalone TUV certified SIL-3 protection. With its world first true integration with the CENTUM VP distributed control system, single controller SIL 3 capability, and benchmark high availability, ProSafe-RS provides the pinnacle in the protection of people, plant and environment.



PLC/RTU | STARDOM

STARDOM automation controller is perfectly suited for all industrial control applications that need higher reliability, redundancy and flexibility, yet don't require a full blown DCS. STARDOM's unique high-density data buffering, tight integration with FAST/TOOLS enterprise automation SCADA platform and wide area networking capability, allows new and existing customers to take advantage of reduced downtime, operational data gathering assurance and ease of HMI integration in a single platform



SCADA | FAST/TOOLS

FAST/TOOLS is a powerful, state of the art, flexible, distributed operations information and supervisory control system. It is a leading package utilising the latest best in class IT technology and is available on a wide range of industry-standard computer systems.

Many global industrial companies and utilities rely on Yokogawa's SCADA system FAST/TOOLS. The system is used to manage production processes while guarding availability and efficiency in a way that maximises return on investment and minimises cost of ownership.

FAST/TOOLS success in many of these critical applications is based on its highly reliable open architecture design, support of quadruple redundancy and its on-line configuration possibilities. These properties contribute to high efficiency and high-quality production processes.

FAST/TOOLS has been developed with a number of key issues in mind, one of which is the provision of a system that can start small yet easily grow with short and long-term application needs. This has seen many of our customers develop applications with several million tags which operate in a highly efficient and informative manner. This guarantees your investment against premature obsolescence. Furthermore, as a hardware and operating system independent supplier Yokogawa is committed to the support of standard operating systems, standard network protocols, standard user interfaces and standard software development tools.



FIELD INSTRUMENTS, ANALYTICAL INSTRUMENTS & RECORDERS

OpreX™ Measurement

Yokogawa offers field instruments designed to deliver the highest precision measurement even in the harshest operating conditions. Yokogawa's range includes field wireless, pressure transmitters, flow meters, temperature transmitters and both liquid and gas analysers.

Since developing its first magnetic flowmeter for industrial use in 1953, Yokogawa has provided a wide range of flow measurement solutions with high quality, accurate and reliable products. All of these products are designed to give you maximum accuracy, stability, safety and reliability, with the objective of reducing your cost of ownership.

PRESSURE

Yokogawa have manufactured Pressure Transmitters for over four decades. We revolutionized the industry and set a new standard for pressure measurement with the introduction of the Dpharp pressure sensor in 1991. The superior performance of this new technology enabled exponential market expansion with over 5 million Dpharp transmitters operating in various industries globally.

Yokogawa continues this Digital Technology evolution with enhancements within our Dpharp family to deliver best in class pressure measurement solutions for our customers.



TEMPERATURE

Yokogawa have designed and built leading technology temperature transmitter devices for over two decades. Yokogawa's temperature transmitters provide accurate reliable temperature measurement that brings unique value to temperature measurement to meet and exceed client requirements.

Yokogawa temperature transmitters are engineered to endure tough application conditions.



DISTRIBUTED TEMPERATURE SENSING

Yokogawa's DTSX is a compact, low powered, weather proof Fibre Optic Distributed Temperature Sensing system. The DTSX provides integrated automation with DCS, SCADA and field instruments and provides temperature information for up to 50kms in down well, sewer, power line, conveyor and many other applications.



FLOW

Yokogawa manufactures a wide range of flow measurement solutions for metering of liquid, gas or steam flows. Built with world leading technology and designed for long operation in harsh applications, they are robust, reliable and maintenance friendly. Our product range includes magnetic, vortex, Coriolis, Variable Area, Averaging Pitot, Orifice and Sonar type flowmeters.

Yokogawa's latest generation flow products provide Unrivalled Performance, Increased Process Insight and Total Lifecycle Support



ANALYSERS

Yokogawa's range of process analysers comprises liquid and gas analysers from pH through to gas chromatography. These products are built to work in the toughest conditions while providing reliable accurate measurements.

All Yokogawa analysers are easily maintainable and incorporate user friendly menu operation, reducing wasted time in the plant by enabling greater insight into measurement validity and maintenance requirements.



PROCESS ANALYSER SYSTEMS

Yokogawa has gained an enviable reputation for highly reliable process analyser solutions across the oil and gas, minerals, power generation and chemical industries. Yokogawa Gas Chromatographs, Absorption Spectrometers and liquid analysers are incorporated in our systems as well as third party components. To complement our products, we have a comprehensive array of services, starting from front-end engineering design, project management and execution, right through to life cycle services and site support.



CONTROLLERS & RECORDERS

Data acquisition (DAQ) is the measurement, recording, analysing, and presentation of real world phenomena. It includes electrical measurements such as voltage, current, power as well as measurements through sensors and transducers including temperature, pressure, flow, level, strain, acceleration, pH, humidity, and more.

Selecting the ideal recorders/data loggers depends on your application. Typical factors include sample rates, channel scalability, signal conditioning, sensor types, analysis capability, mobility, and environmental conditions. Yokogawa recorders/data loggers are recognised for industry leading measurement accuracy, noise tolerance, and build quality. These include most industrial networking protocols, all-in-one architectures, and typically require no programming.

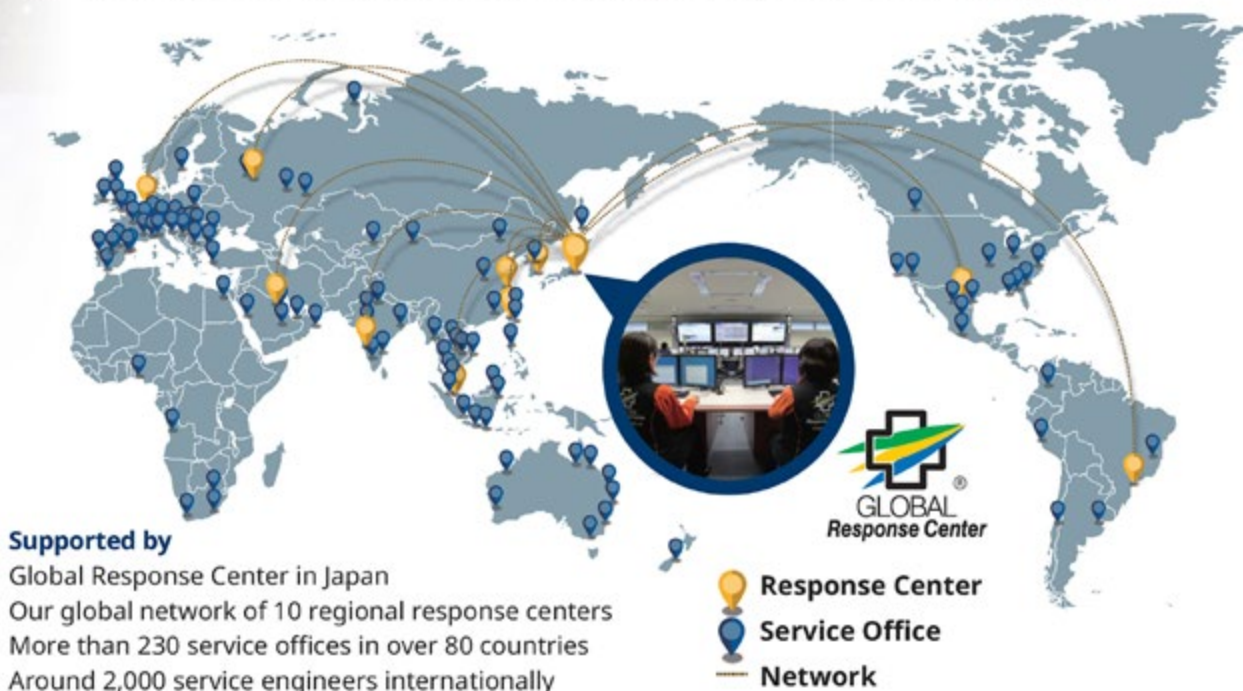


Lifecycle Services

OpreX™ Lifecycle

Accuracy, reliability and surety of operations is not only a primary concern for Yokogawa's customers, but also Yokogawa itself. We are committed to working with our customers to ensure your systems and devices achieve maximum availability throughout the entire life of the equipment. Central to this philosophy, is a focus on a process of continuous improvement. This involves regular reviews of the service and support program to ensure the equipment is kept in prime working order, being used in the most efficient manner and is not being over or under serviced

Comprehensive Global Service Network supports you with 24/7 operations



SUPPORT SERVICES WHERE & WHEN REQUIRED

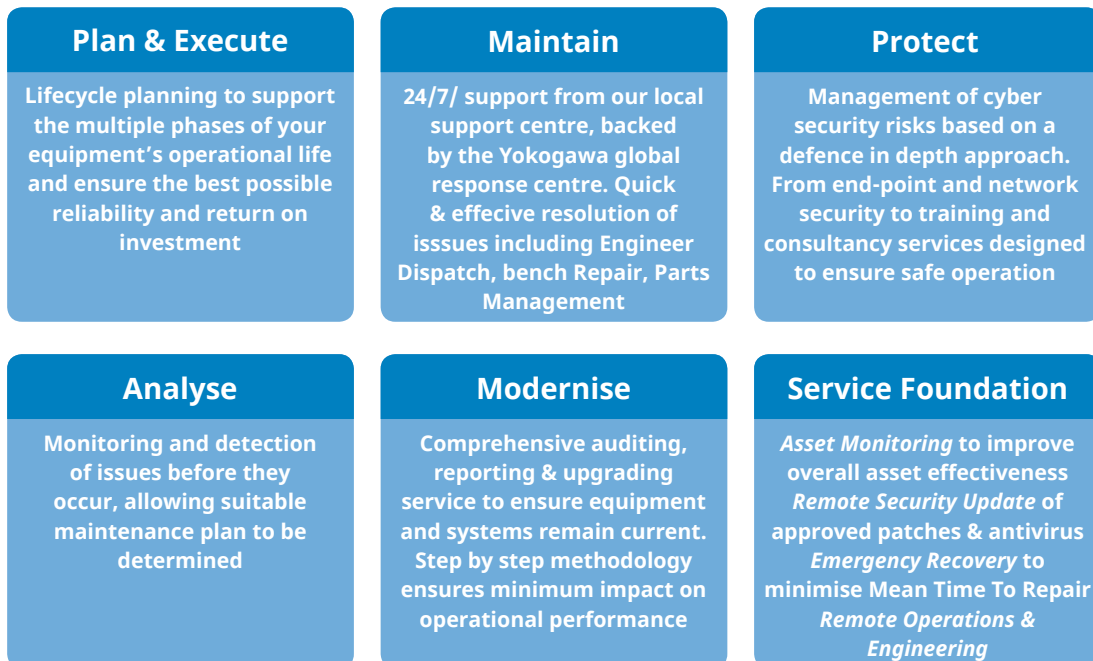
Yokogawa Australia & New Zealand's Lifecycle Service business provides nationwide coverage stemming from our nine offices around the region and with over fifty engineers and support staff. This provides a reliable and stable platform from which we can provide frontline service and support to our customers in the Australian, New Zealand and Pacific regions. In doing so we are in a position to offer customers a range of frontline services including (but not limited to);

- Technical support for hardware, firmware, and system software maintenance and upgrades
- At call 24/7 support through electronic paging system
- Access to escalation support services as part of the global Yokogawa technical support system
- Audit services
- Process Safety, Network Health & Cyber Security services
- Field instrument troubleshooting and calibration services
- Technical advice on upgrades as they become available
- Planning and execution of brownfield system expansions, modifications and migration
- Consultancy services

Our regional Service and Support capabilities are further enhanced by Yokogawa's Global Response Centre based in Japan for cases which may need to be escalated.

REGIONAL EXPERTISE & LIFECYCLE MANAGEMENT

The diversity of our business in the region ensures that we have specialist skills in many of the key industry segments including (but not limited to) Oil & Gas, Power Generation, Mining, Food & Beverage and Water. This advanced level of expertise allows our Lifecycle Services team members to quickly and effectively diagnose issues, identify early warning indicators and provide consultative support on plant performance and improvement. Our range of flexible service offerings also ensure that all aspects of the plant lifecycle are catered for, allowing even the most resource stretched of industrial plants to operate at optimal levels while ensuring the best possible return from operational expenditure.



Training & Development

Process industries in Australia and New Zealand are faced with numerous personnel related challenges, from demographic change to human resource shortage and cost constraints. With such issues it is more important than ever to have a well-trained and effective team. A clearly defined and constructed training plan has the potential to not only improve individual role effectiveness, but also help identify process issues and opportunities which if addressed can lead to improved safety, increased efficiency and process output.

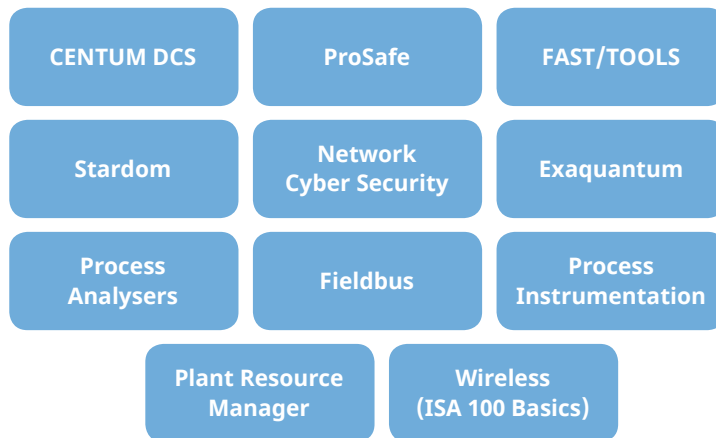
Engineering

Operations

Maintenance

Yokogawa are a registered training organisation, providing a full range of certified training courses to help our valued customers obtain the best from their equipment up to diploma standard. As well as standard courses in all aspects of Yokogawa process control, safety and SCADA platforms, we can provide special courses for customers for the full range of Yokogawa equipment. We also offer e-learning systems which provide the flexibility often required by remote customers.





Yokogawa also draws on its expertise in process control theory gained over the past 100+ years to provide general training courses on Control Theory, Loop Tuning and Good Design Criteria for operator displays. We also work with our customers to develop specific courses based upon the needs of their application and/or staff training requirements. Our qualified and expert training staff adapt teaching methods that maximise each learner's achievements.

Electricity Supply Industry (ESI) Generation-Operations

Yokogawa provide Nationally recognised Boiler Standard (BS), Advance Boiler (BA) and Turbine Operation (TO) courses to get High Risk Work (HRW) Boiler or Turbine tickets. We also provide nationally recognised Certificate II, Certificate III, Certificate IV and Diploma qualifications of Electricity Supply Industry through Recognition of Prior Learning (RPL).

TÜV Rheinland Functional Safety Program

We provide Functional Safety Engineer programs to all who are involved in the design, realisation, maintenance and operation of safety systems with elementary and necessary knowledge based on the international standards IEC 61508 and IEC 61511. We also provide Functional Safety Technician programs to those who are involved in the maintenance and operation of Safety Instrumented Systems with elementary and necessary knowledge based on the international standards IEC 61508 edition:2010 and IEC 61511 edition:2016.

Technology Enhancing Human Performance

The human side of operations is causing the process industries significant challenges. Skilled workers moving to other industries and generational changes which have seen large-scale retirement of experienced engineers combined with a lack of suitable replacements, bite deep into the skills base. The pressure for cost control in a high cost environment means organisations must do more with less, while making better use of the experience of remaining skilled workers.

Generating actions through insights, made by implementation of an effective digitalisation strategy on a well operated process can address many of these challenges. The key is to capture the experience of older engineers and operators and utilise that knowledge in a way which will benefit the business for generations to come. Through collaboration and Co-innovation with our customers, Yokogawa have developed and implemented numerous solutions to this generational crisis.

DIGITAL TRANSFORMATION

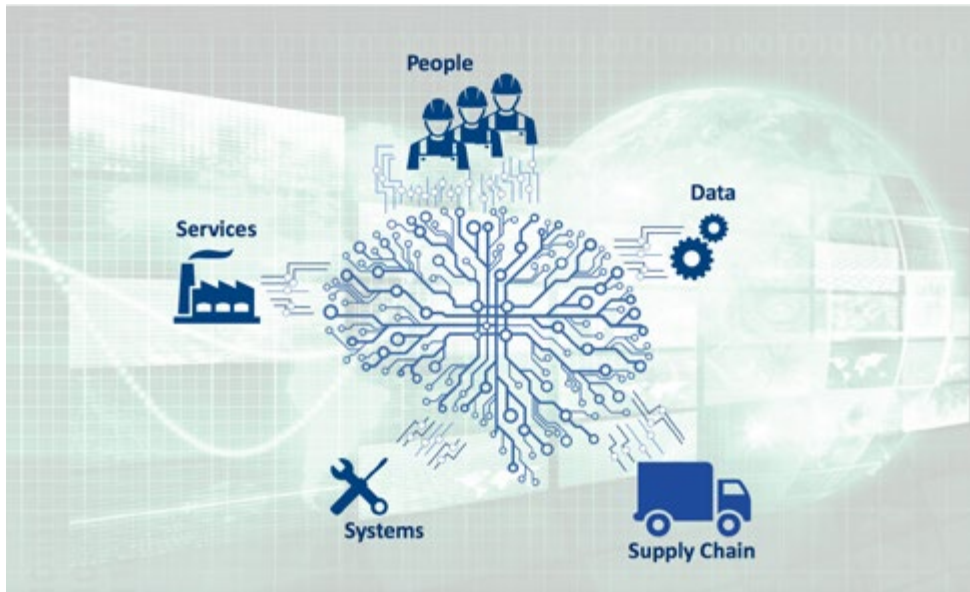
When faced with the current technological revolution sweeping process and manufacturing, organisations risk being overwhelmed by the range of technologies and solutions before them. Many have started their digital transformation journey, with clear objectives and expected outcomes defined. Others are yet to identify whether digital transformation holds anything of benefit, yet alone begin a journey. It is this group who are most at risk of making hasty and uninformed decisions, as pressure mounts internally and externally to take advantage of the 'digital revolution'. The risk of making hasty and ill-informed decisions, thus adopting 'transformational change' without clear objectives can not only be costly, but could be detrimental to quality, safety and productivity.

Yokogawa's approach to working with customers on their digital transformation journey is a collaborative one, adopting a co-innovative and agile model with adaptive methodologies. This allows both parties to identify and reveal the objectives behind your digital transformation decision, understanding the challenges, opportunities and benefits of doing so. It also provides the flexibility to modify your approach during the process as your awareness of the possibilities improves. The ultimate goal is not only to optimise production and develop innovative ways of delivering new business models, but to build a high degree of operational resilience. With real-time dashboards to measure the impact of changes, executives to maintenance engineers have access to the data which defines operational effectiveness.



OpreX™ Transformation

Synaptic Business Automation Creates sustainable value by connecting everything in a customer's organisation. To realise this, Yokogawa integrates business and domain knowledge with digital automation technologies and co-innovates with customers to drive their business process transformation.



ADVANCED DECISION SUPPORT

Yokogawa are leading a market driven, standards-based, integrated approach to help alleviate skills shortage and cost issues across all industry segments. Advanced Decision Support provides an integrated consulting solution that brings together existing concepts, standards, and capabilities to help improve the effectiveness of all operators.

While industry has focused much thought and effort on automating procedures, alarm management, and human machine interface individually, insufficient attention has been focused on how they can all work in unison to help improve operator effectiveness. Such an integrated approach not only reduces manning requirements, but may improve process consistency, operational efficiency and safety.



Improve effectiveness of operator decisions to support, rather than replace operator judgment

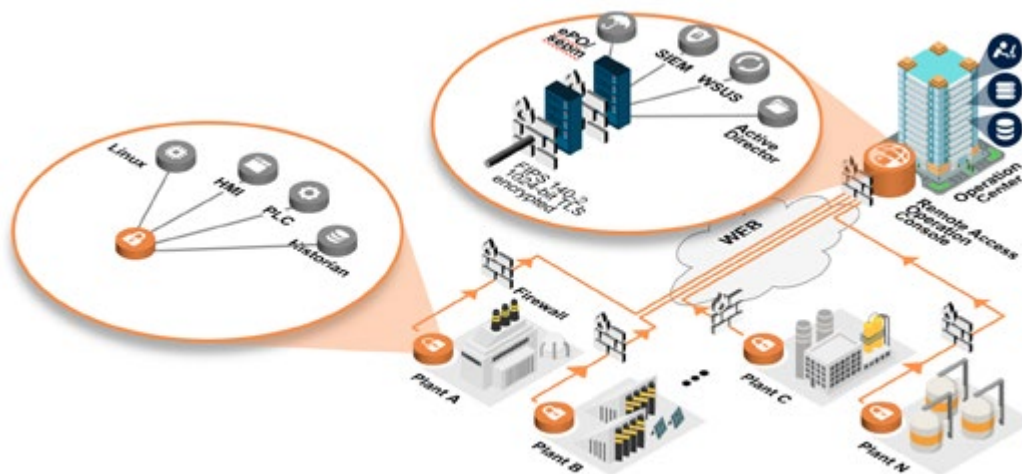
Based on research into human-automated path planning and decision support

Integrates existing, but separate, industry standards into a cohesive solution

INTEGRATED OPERATIONS

Technology has an ever-increasing role in the process plant of the future and will transform it still further with enabling technologies such as IIoT and Intelligent Operations. Deployed by Yokogawa in response to a need to improve overall visibility and increase safety on distributed processes and plants, these technologies have redefined plant operations for customers throughout the Australian and New Zealand regions.

Key to achieving this is the re-evaluation of how automation projects are implemented along with how they can be leveraged to increase value through optimisation and improving plant performance. This is especially challenging where multiple operations over a wide geographical area are concerned. Yokogawa's intelligent operations provide a framework for realising business objectives at the operations level by addressing such drivers as total cost of ownership, enterprise level information management, operational efficiencies and production management.



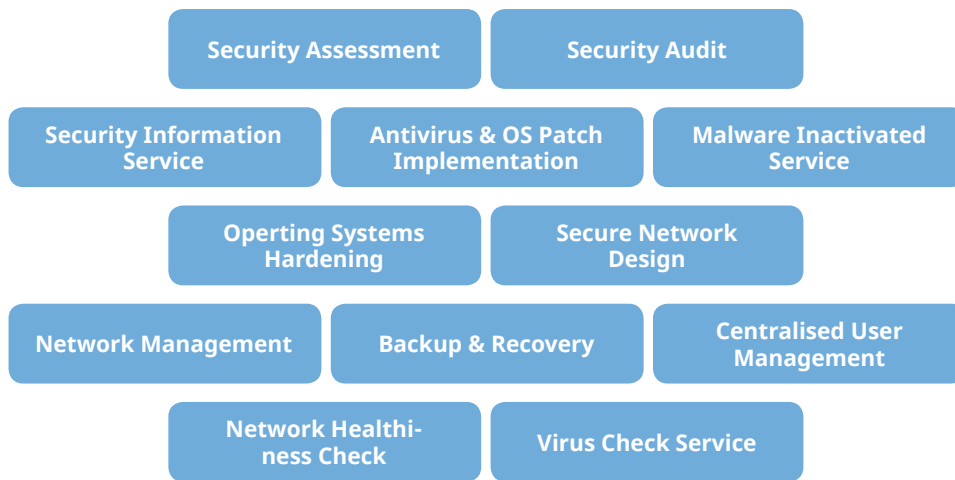
PROCESS SIMULATION

Yokogawa Australia & New Zealand has been developing and implementing low and high-fidelity dynamic simulators for the process industries for over 20 years. With a dedicated design and development group based in Sydney, which is a global centre of excellence for dynamic simulation, we provide leading edge operator training and process optimisation simulators to both domestic and overseas markets. These simulators are a critical component of a Digital Twin and have improved operational efficiency and safety in the Power Generation, Oil & Gas and Mining sectors for over twenty years.

CYBER SECURITY

In a connected world, industrial businesses need to be continuously vigilant and react rapidly and effectively to cyber security threats. As your proven and trusted partner, Yokogawa will deliver Plant Security Lifecycle Services to ensure plant safety and security for mission-critical industries. Based on the defence-in-depth approach and Yokogawa's global initiative corresponding to international standards, we provide a comprehensive approach to enhance operational resilience.

Yokogawa has invested significantly in developing secure solutions to ensure that your process operations are safe and well defended against unauthorised access and malicious cyber-attack. This includes built-in security in all our control systems, secure services for ongoing maintenance (such as anti-virus updates and patches), end-point security and highly experienced resource throughout our Australian and New Zealand offices. Such expertise not only ensures secure project design, but it is encapsulated within our technical service and support business to work with customers in ensuring ongoing safe and secure operations.



Not only do we offer a range of cyber security products and services to existing and new customers, our portfolio is continually evolving to ensure next generation threats are addressed rapidly. Our consultancy services provide access to highly qualified and experienced SME's who can undertake plant, or companywide assessments. This allows you to address challenges individually or holistically as required. Using a collaborative approach, we can implement safeguards in line with overall IT and OT directives.





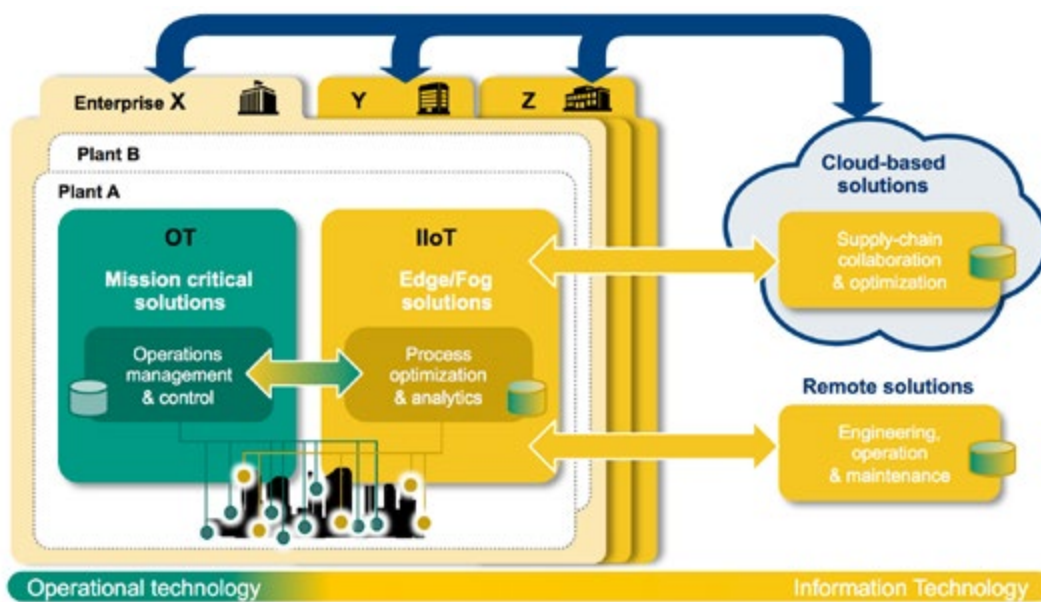
IT/OT CONVERGENCE

Connecting industrial devices, systems, and applications to provide plant and enterprise personnel with actionable information is not a new concept. Leading automation and software suppliers have been working diligently to address this requirement for decades. These efforts have not always been entirely successful, due in large part to poor interoperability between operational technology (OT) and information technology (IT). This has hampered business performance.

At the OT level, a wide range of different sensors, intelligent field devices, controllers, systems, mobility devices, application software, networking, and security components come into play relative to the Industrial Internet of Things. While these come in all “shapes and sizes,” all feature built-in intelligence, self-diagnosis capabilities, connectivity, and support for analytics.

Yokogawa adds significant value in the operational technology (OT) domain, while helping ensure the prerequisite integration needs of OT by working closely with IT enterprise solutions. In addition to supplying a wide variety of related industrial hardware, software, and services, our deep knowledge of industrial organisational issues, real-time data processing, data storage, and analysis, and managing data from devices, machines, and other “things” in the plant and in the field provide significant added value.

Yokogawa’s Synaptic Business Automation approach helps ensure the appropriate rigor required to make sure that OT integration with IT solutions meet the demanding safety, security and availability requirements for mission-critical industrial automation.



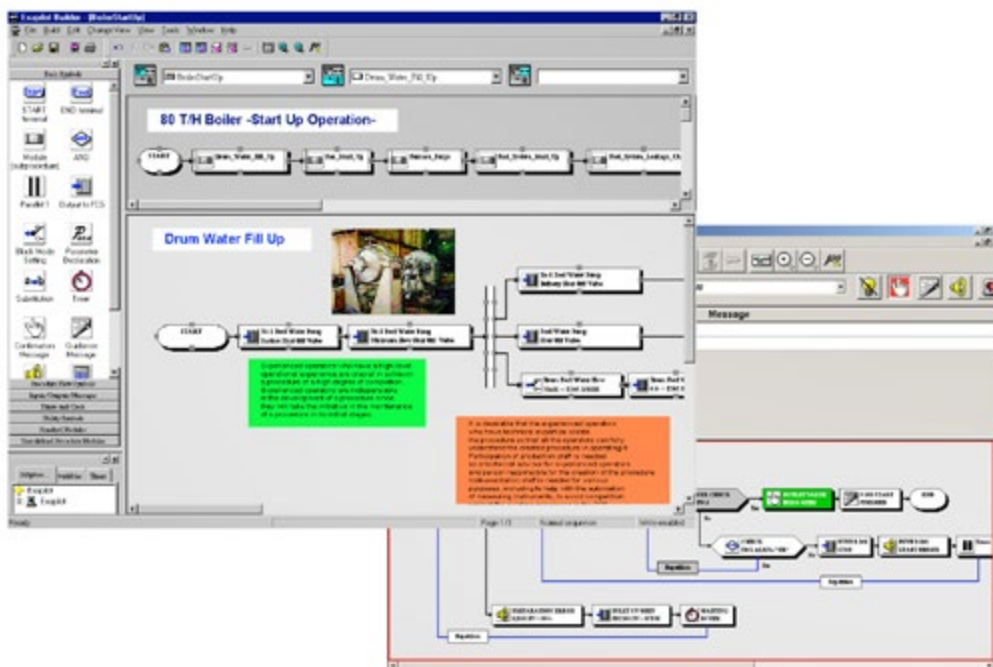
PROCESS OPTIMISATION

PACE is Yokogawa's Advanced Process Control solution, and is a platform for multivariable, model based advanced control. PACE has a wide range of applications including Oil & Gas (upstream and downstream), Chemicals and Mining. By integrating PACE with the Yokogawa CENTUM DCS (or other control system), significant efficiencies can be gained, improving production and reducing energy usage.

EXAPILOT

Yokogawa's Exapilot provides operators with a powerful means of capturing their knowledge and building electronic Standard Operating Procedure's into the operator interface (HMI). This ensures that any operator, regardless of experience or capability, will operate critical processes (such as start-ups and shutdowns) in the same way.

In addition to sharing procedural knowledge, shift information can also be captured and shared using Yokogawa's RPO Operations Management. This provides web-based shift logs, shift handover reports, incident management, work instructions and permits. A highly flexible tool, the application can be easily configured to meet the requirements of any plant.

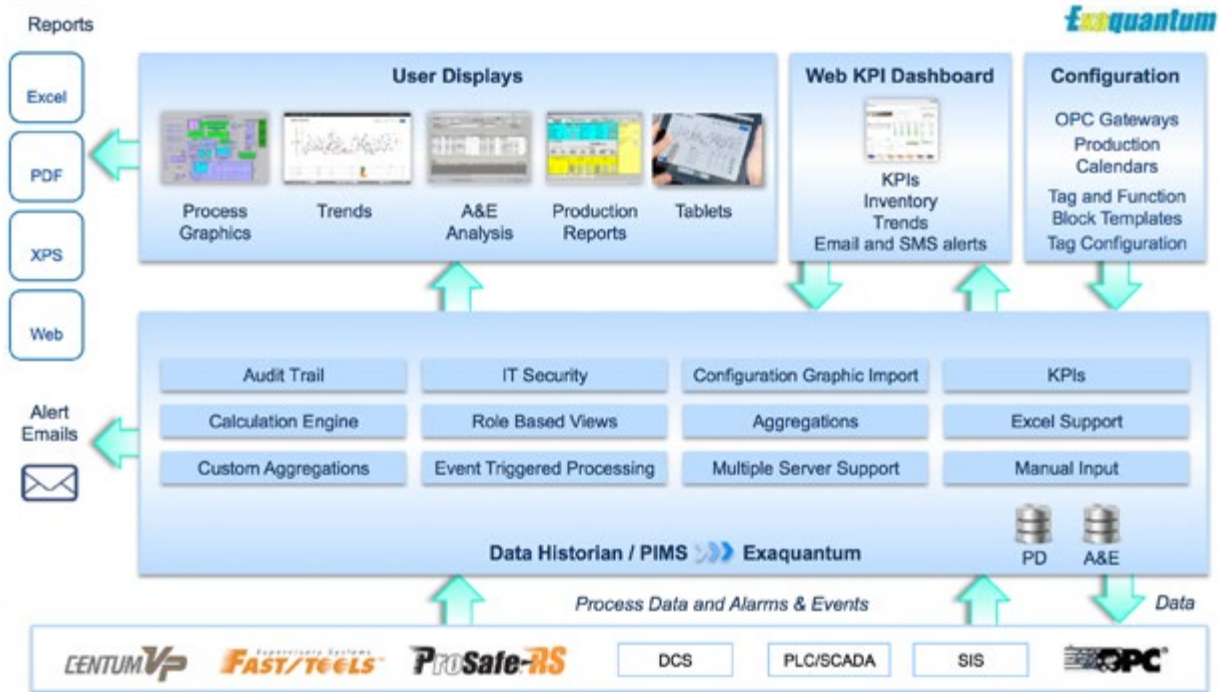


ASSET MANAGEMENT

Yokogawa provide an integrated approach to asset management through Plant Resource Manager for field devices, to InsightSuite for monitoring and reporting on plant equipment and performance. Combined with our Enterprise Management System (FAST/TOOLS) and cloud-based technologies, a complete understanding of a company's assets is possible.

ADVANCED SOLUTIONS PLATFORM

Exaquantum is Yokogawa’s platform for many of its advanced solutions. Exaquantum is an enterprise-level process data management tool that integrates data from all assets and provides an analytics engine and dashboarding for a wide range of applications. This includes alarm management, safety analytics, downtime analysis and data exchange with many other systems. Through these tools, safe operations are enhanced and insight into plant performance provides greatly improved process optimisation.



KBC, a wholly-owned subsidiary of Yokogawa Electric Corporation, is all about excellence in the Oil & Gas, Petroleum, Energy and Chemical industries. Living excellence in all we create and in all the services we deliver and leaving a sustainable legacy of operational excellence among our customers. We make excellence real for our customers through the actions of our people fused with our technology and best practices. We provide leading software and expert services, powered by the cloud, to assure process operations achieve their full potential, surpassing ordinary standards.

DIGITALIZATION TECHNOLOGY

Analytics

- First principles simulation
- Correlation-based modeling

Manufacturing execution

- Planning
- Scheduling
- Production and yield accounting
- Operations management

Automation

- Procedural automation
- Advanced process control
- Real-time optimization

Personnel learning & development

- Operator training simulators



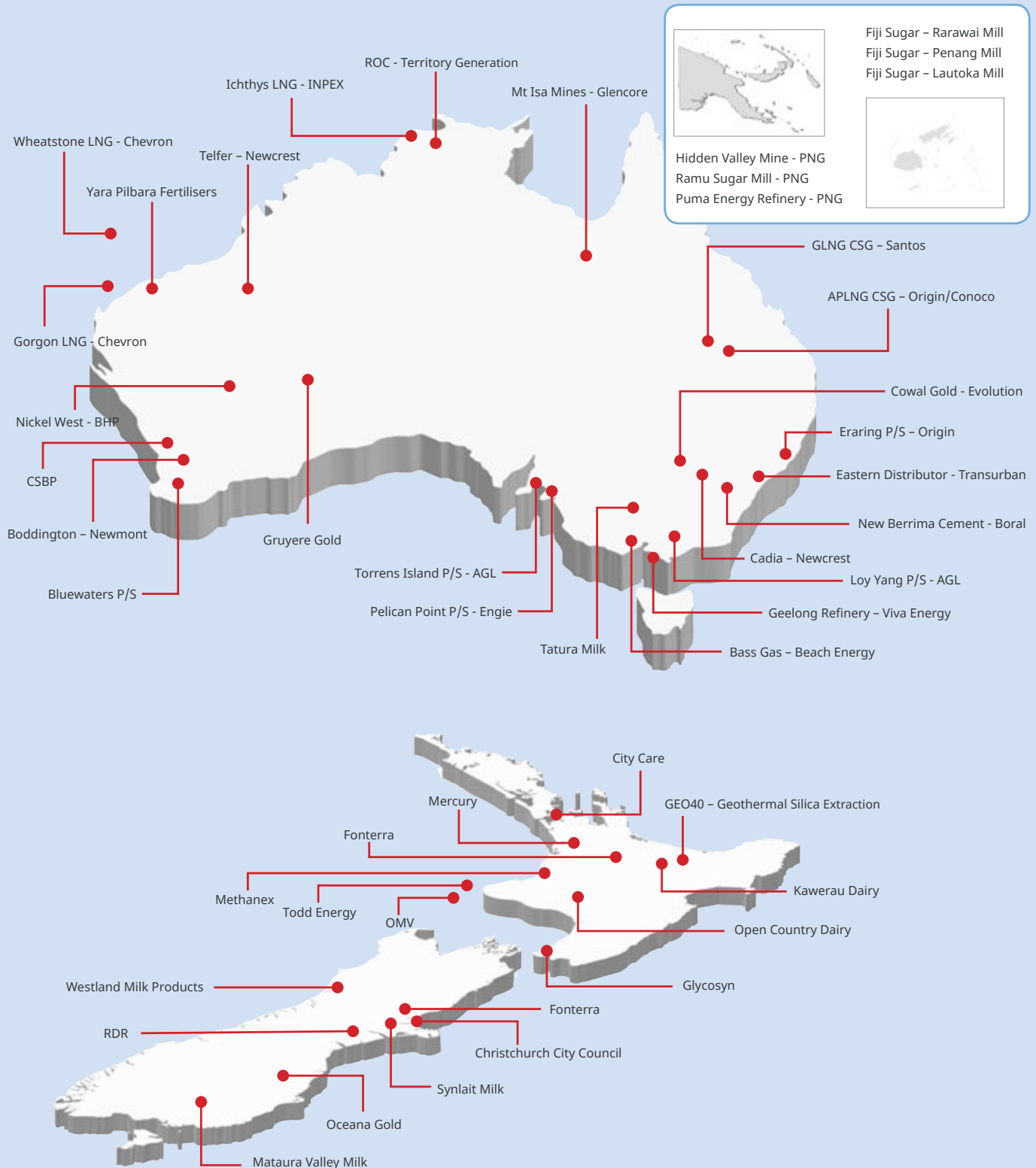
DIGITALIZATION SERVICES

OpX consulting

- Digitalization consulting
- IT & modeling services
- Cloud services

Industries

Over the last thirty years, Yokogawa Australia and New Zealand have been active in a wide range of industry segments. This has provided a diversity of project expertise which allows us to use best practice knowledge from all industries to tackle the most complex of challenges. With in-depth practical experience, Yokogawa are the ideal partner for your project irrespective of size or complexity.



Oil & Gas

For over 30 years, Yokogawa has been a leading service provider to major Oil & Gas customers in the Australian, New Zealand and Pacific Island regions. Our core expertise in Distributed Control, Process Safety, Process Instrumentation and Process Analysers has been an industry benchmark, providing exceptional levels of reliability and support. From refining, offshore and subsea, to more recent coal seam gas and LNG applications, Yokogawa has developed and implemented solutions that ensure enhanced process control, safety and optimisation. With extensive local expertise, we work closely with clients to ensure optimal plant design, from concept to implementation, supporting throughout the plant lifecycle. Our engineering and consultancy services focus on providing simple and cost effective solutions to complex issues.

Yokogawa's longevity as a key services provider to the industry has revealed a high level of insight into project challenges, especially that of skilled resource availability. As one of the biggest risks to a project during development and operational phases, we recognised the need to support our customers with an industry experienced Services team. With many years of experience, our Services team provides solutions that enhance safety, ensure accurate, reliable operations and increase plant efficiency.



Refining | Coal Seam Gas | Subsea | LNG Platforms | FPSO | Pipelines | Terminals

SUCCESS STORY

Chevron Gorgon & Wheatstone LNG

Chevron selected Yokogawa as Main Automation Contractor for the massive Gorgon and Wheatstone developments, not only in recognition of their highly reliable products, but also proven capabilities in delivering large and complex Oil & Gas projects. Working within strict time and budget constraints, the Yokogawa engineering and Technical Services teams developed and delivered both onshore and offshore facilities which are controlled by Centum DCS with ProSafe RS safeguarding. Yokogawa flow, pressure, temperature and analysers provide highly accurate and reliable measurement of the many thousands of process parameters. The FAST/TOOLS SCADA platform also allows land-based personnel to monitor the performance of all assets in real-time as part of the Remote Operations centre for Wheatstone.



Gorgon is one of the world's largest LNG projects and the largest single resource project in Australian history. Located on Barrow Island, Gorgon has three trains producing 15.6 million tons per annum of LNG. The project has a predicted lifespan of 40 years, with the Yokogawa Technical Services group working closely with Chevron to ensure high performing and reliable operations throughout its life.

The foundation of the Wheatstone project includes two liquefied natural gas (LNG) trains with a combined capacity of 8.9 million metric tons per annum and a domestic gas plant. The offshore processing platform is located in 70 metres of water, about 225km from the coast which gather and partially process gas and associated condensate from the Wheatstone, Iago, Julimar and Brunello gas fields.



SUCCESS STORY

Origin Energy Australia Pacific LNG

When developing one of the first large scale unconventional Coal Seam Gas (CSG) projects in Australia, spread over 1.2 million square kilometres, Origin Energy and their partners (ConocoPhillips and Sinopec) needed a technology partner who could match their safety, reliability, visibility and consistency expectations. In selecting Yokogawa Australia, APLNG were partnering with an organisation with a long track record for delivering complex Oil & Gas projects to tight timescales using highly reliable solutions.



Drawing gas from around 2000 wells (predicted to peak at 10,000) in the Bowen and Surat Basins, each wellhead is controlled by a local Stardom RTU. Performance data is fed back from each wellhead to the central control room in Brisbane where FAST/TOOLS SCADA processes around 2.5 million data tags in real-time (expected to grow to 7.5million) and provides a highly informative and intuitive control environment for operators. Data is also extracted from a number of pipeline compression stations, gas processing facilities and water treatment facilities along the 530km pipeline which extends to the Gladstone terminal. Each of these locations are controlled by Centum DCS, complemented by ProSafe RS process safety systems. Such high levels of data accessibility allow the Origin team to effectively manage production efficiencies from all well sites, in a safe and reliable environment.



Mining & Metals

Yokogawa have been working with miners in the Australian, New Zealand and Pacific Island regions for decades, supporting them in their journey to ensure the highest levels of safety and reliability, while striving to remain competitive in an environment of fluctuating commodity prices. Part of our success in the mining industry is due to our desire to co-develop solutions to the most complex of challenges. This provides mining companies with the opportunity to develop agile solutions to major issues while ensuring maximum return on investment.



MODEL BASED MINING

For decades, the mining industry has been plagued by disconnected processes providing limited end to end visibility for operations and management teams. Adoption of new and innovative technologies have attempted to address this and other issues, yet many see little improvement. Markets will no longer tolerate production at any cost, presenting miners with the challenge of adapting or disappearing.

When reviewing a client’s process improvement journey, Yokogawa’s principles have been about ensuring the basics are done well as a first step. This underpins all future activities from new device introduction, control system upgrades all the way up to a holistic revamp of data collection, analytics, simulation and reporting methods.

Yokogawa has worked closely with the mining industry over the years to develop a range of solutions for grinding circuit optimisation, flotation control improvements and procedural automation to ensure processes operate effectively and safely.

Yokogawa’s approach stems from decades of best practice implementation and Co-innovation in a diverse range of industries, merged with the best of mining. Many have common challenges related to safety, visibility, streamlining, cost and supply chain management. We believe in keeping complexity to a minimum through providing guidance on operational excellence, technology improvement and the replacement of disjointed reporting systems with streamlined management dashboards that report on valuable operational performance indicators.



Gold | Copper | Nickel | Zinc | Coal | Iron Ore | Lithium | Diamond

SUCCESS STORY

Newcrest Cadia & Telfer Operations

The processing of gold ore is notoriously complex, consisting of multiple circuits requiring close monitoring and control to ensure desired ore yield and consistencies. Its also a particularly harsh environment, meaning the equipment deployed needs to be rugged, highly accurate and extremely reliable. It's with this in mind that Newcrest selected Yokogawa Australia, along with their process knowledge, for its Cadia Valley and Telfer operations.



Centum DCS has been the preferred solution to the main processing plant at Cadia since commercial production commenced in 1999 providing above ground control, along with Stardom PLC's and Fast/Tools SCADA. The operations environment was developed to be simple and intuitive, taking advantage of the high levels of instrument diagnostics to aid operations and maintenance teams. As one of Australia's largest gold mines and one of the worlds most profitable, Cadia produced 599,717 ounces of gold and 61,764 tonnes of copper in the year to end of June 2018.

Telfer gold-copper mine in the Great Sandy Desert in the East Pilbara region of Western Australia has been using Centum since mining recommenced in 2004. The remoteness of the mine and need to utilise fly in, fly out workers makes the need for an intuitive and well-structured operations environment even more important. Yokogawa's engineering and technical services groups used their long experience in the industry to ensure all critical elements of the process were not only robust, but well represented in the central operations room. In the financial year ending 30 June 2018, Telfer produced 425,536 ounces of gold and 16,212 tonnes of copper.



SUCCESS STORY

Gruyere Gold Project

Establishing new mine and processing facilities at one of the largest undeveloped gold deposits in outback Australia just over five years after discovery requires careful planning and support from industry experienced partners. It was with this goal in mind that joint venture partners Gold Road Resources and Gold Fields Ltd selected Yokogawa's Centum DCS as the control system of choice for their key Gruyere Gold project, with Yokogawa's long track record of similar applications in the region being crucial.



Discovered by Gold Road Resources in October 2013 on the South Dorothy Hills Trend, 25 kilometres north-east of the company's original Yamarna Belt discovery, Central Bore. The Gruyere Gold project, in Western Australia has been fast tracked to ensure its immense potential is quickly realised. The site consists of a large-scale open pit mine feeding a 7.5 million tonnes per annum processing plant, estimated to produce up to 300,000 ounces of gold per annum over an initial 13-year mine life. The project delivered its first ore in January 2019, with gold production expected in June.

The control system was engineered out of Yokogawa's Belmont office in Western Australia, using a team of experienced engineers who have been involved in some of Australia's largest Gold mines over the last 20+ years. A crucial element of the control system design was to build a highly reliable and adaptable solution which could scale up as the mine grew. Providing the capacity for a high level of data insight was also important to allow the team at Gruyere the opportunity to utilise the advanced levels of diagnostic information built into the system as standard. This will be especially important where changes in ore grade are concerned, where the process needs to adapt to lower grades or harder rock.



Power Generation

Power generation in Australia and New Zealand is not renowned for its speed of change. However, the level of industry disruption in recent years has led to a wholesale review of key fundamentals. This has proved challenging for traditional sectors of the power industry who are weighed down by regulatory expectation and the need to update processes and systems, (something not always faced by new entrants to the market). Combined with consumers now selling self-generated power back to the grid, traditional power generation companies appear to be facing an assault on all sides.

Yet change is underway, and Yokogawa are uniquely positioned to support the industry through decades of experience working in all areas of the power generation industry from conventional thermal power to renewables, hydro and geothermal.

As power generation becomes more distributed, Yokogawa have deployed cloud-based solutions that enable integration of data across a range of generation assets. These cloud technologies provide analytics that can greatly enhance the profitability of distribution networks across a wide geographical range of large and small assets.

Yokogawa not only support traditional generators in improving their operations, but also play an active role in assisting with dynamic change. Our power industry experts work collaboratively with customers to develop solutions that best meet their sophisticated requirements. These are often innovative and ground-breaking solutions which allow even the most complex of challenges to be tackled by combining the effective strengths of both parties.

Digitalisation of
asset intensive
business

Unlocking data
from within
the process

Optimising
existing
equipment to
ensure full ROI

Centralised
monitoring of
remote assets

High speed,
low cost roll-out of
new technology



Thermal | Combined Cycle | Cogeneration | Solar | Wind | Geothermal | Biomass | Waste To Energy | Hydro

SUCCESS STORY

Territory Generation Remote Operations Centre

Territory Generation (TGEN) produces over 90% of the electricity in the Northern Territory, with a power generation fleet of 8 power stations spread up to 1,800km's apart. Such geographic isolation combined with a lack of standardization across the fleet not only caused maintenance and responsiveness issues but was also a major safety concern due to remote working. Compounding this was a need for greater flexibility, leading to the decision to develop a Remote Operations Centre (ROC) based out of the Darwin Head Office.



Yokogawa were selected as the preferred technology partner to deliver a FAST/TOOLS Enterprise Operations SCADA solution. FAST/TOOLS addressed many of the legacy interfacing issues, connecting all eight assets including the new battery and solar farm with ease. ISA101 graphic design standards were used which ensured an easy to interpret and intuitive HMI. Greater flexibility of the system also allowed them to respond to maintenance and market demand changes with minimal of disruption.



SUCCESS STORY

AGL Torrens Island Power Station

AGL Energy's Torrens Island Power Station (TIPS) is located on Torrens Island in South Australia and burns natural gas to generate up to 1280MW of power. As the largest power station in South Australia, it is a critical asset and one which requires a highly skilled operator workforce not only to maintain the process to improve it. It was with this need in mind that the team at TIPS selected a Yokogawa Plant+ Simulator in 2016 to take them on their process improvement journey.



TIPS wanted rigorous training for operators in all aspects of unit, common and local plant operations. They also needed to ensure that failure and malfunction situations were addressed quickly and efficiently. Such failures and malfunctions would need investigating to identify root causes and prevent any repetition. Another crucial aspect was the testing of control and logic modifications, or proposed alterations to plant operating regime without having a detrimental impact on operations. Being able to test process and equipment modification scenarios using live plant data, yet without affecting operations was a huge attraction to the TIPS team.

In the years since taking ownership of their Yokogawa process simulator, TIPS have not only maintained a highly skilled and responsive operator team but have implemented several process improvements which were first tested in a safe environment. Such flexibility has allowed AGL to run the power station at peak performance even during periods of high demand and without unnecessary interruption.



Food & Beverage

The food and beverage industry must produce consistently safe, high-quality food and beverages for consumers. In addition to quality control, the manufacturing processes include many challenges such as managing ingredients, improving efficiency and handling global environmental issues. Yokogawa leverages its decades of technological expertise to help customers build and operate the ideal factory.



Yokogawa's extensive experience in the Food & Beverage industry continues to support our customers in their performance improvement journey. Through increasing reliability of the devices which control and measure the process, to improving data flow and analysis, we support our customers in better understanding their operations in their fight against global competition.

For an industry under pressure due to rising energy and production costs and with stringent demands on consistency, quality and legislation, it is of paramount importance to partner with an organisation who understand their challenges. Not only can we provide a range of products and services to support your business but can co-develop solutions to even the most complex of challenges. In such an aggressive competitive environment, this allows Yokogawa customers to make better informed investment decisions which may otherwise have been deferred or dropped due to cost concerns.

Visibility for all parts of the process

Data accuracy and availability for monitoring of quality & food safety

Process & procedure management for consistency of operations

Adherence to and support of standards

Connecting processes for better informed decision making

ISO 9001:2015

IFS

Dairy | Brewing | Confectionary | Sugar | Package Foods | Grain | Oils | Wineries

SUCCESS STORY

Tatura Milk Milk Processing Plant

Tatura Milk, a Bega Cheese company, is located in the picturesque township of Tatura in regional northern Victoria. As a manufacturer of quality milk products, it has grown from humble beginnings in 1907 to where they now process around 80,000 tonnes of locally sourced dairy products annually. Manufacturing to the most exacting standards and specifications using state of the art technologies and systems, they are the largest private label manufacturer of cream cheeses and life stage nutritional powders in Australia.



Yokogawa's involvement with Tatura began in 1990 with the installation of a uXL DCS system. This has evolved over the years to CS1000, CS3000 and now Centum VP, growing to over 17,000 I/O in size. Critical quality measurements are taken by Yokogawa pressure, flow and Coriolis instruments, with Exaquantum Plant Information Management System extracting data from the DCS for use in reporting and management of operations, all critical for a plant that must be able to respond quickly to changing customer demands.



SUCCESS STORY

Fonterra Edendale

Ongoing and efficient operation of one of the worlds largest milk processing plants at Edendale on New Zealand's South Island is not only demanding but presents numerous challenges. Maintaining product quality and consistency are two key expectations, attributes for which owners Fonterra are universally recognised and to which Yokogawa New Zealand play a leading support role. With increasing domestic and overseas demand for high quality milk products, it is more important than ever to maintain quality standards as is the need for reliability to ensure delivery expectations can be met. Yokogawa's global reputation for quality and reliability in its range of process instrumentation ensures the Edendale plant maintains high levels of availability.



Fonterra is the fourth largest dairy company in the world and New Zealand's largest by turnover, owned by around 13,000 farmers throughout the country. The plant at Edendale is one of the largest milk processing facilities in the world with one of the world's biggest milk dryers and produces a range of product from cheese to milk powder. Edendale currently has four drying units which produce whole, skimmed and buttermilk powders, as well as cheddar and protein concentrates.

Fonterra's processing methods are considered to be some of the most efficient in the industry, with Yokogawa process instrumentation playing a major role. Boiler condition monitoring for example is performed by Yokogawa Vortex flowmeters and oxygen analysers, with a range of pressure and temperature instruments throughout the main process. Water quality must also be consistent, with conductivity and pH measured to ensure this critical element falls within the tight ranges specified.

Fonterra are one of the milk industries most respected brands, with a reputation forged through years of supplying quality products. Yokogawa are proud to support Fonterra through their work with them at Edendale and other locations, sharing the same principles of quality, reliability and efficiency.



Water

The Water industry in Australia and New Zealand is undergoing transformational change as it looks to address a range of disruptors which require cultural and technological change. From the challenges of increasing demand, an aging workforce, skills shortage, technological innovation, climate change and sustainable management, the industry is evolving rapidly as customer and regulatory demands reform their businesses.

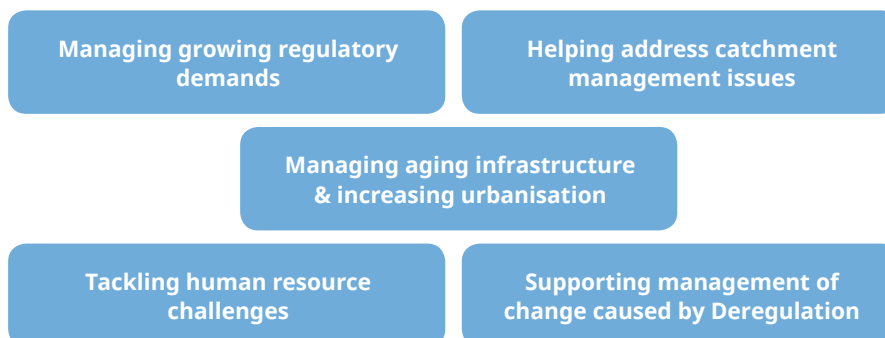


Yokogawa has been collaborating with the Water & Wastewater suppliers for many years, delivering cost benefit solutions through controls, instrumentation and advanced solutions. Improving data visibility, safety, reliability and performance of plants not only ensures they can operate competitively in today's water markets, it also helps reduce operational costs.

Looking to the future, Yokogawa use not only the wealth of experience in Water to help guide our customers, but also relevant best practice from other industry segments. Human resources issues for example are a challenge in other segments. With 36% of over 50's due to retire in the next 10-15 years in the Water industry, using best practice to simplify operations and capture the knowledge of experienced operators is critical to ensuring ongoing surety of operations.

Through cloud-based water management technologies, Yokogawa have developed solutions that balance supply and demand to increase reliability and optimise energy usage. Leakage detection and identification of illegal discharge into sewer networks are other areas where Yokogawa have provided significant advantage to our customers.

With a goal of sustainable water production through energy-efficient technologies, we help to reduce the carbon footprint of operations while helping them proactively manage water resources.



Water | Wastewater | Recycled Water | Desalination | Irrigation | Industrial

SUCCESS STORY

Christchurch City Council

When providing clean water and surety of supply to around 147,000 households on New Zealand's South Island, Christchurch City Council (CCC) needed technology partners they could rely on. With a strong global reputation for accuracy, quality and reliability, Yokogawa New Zealand became one such supplier and have continued to faithfully support them for the last twenty years.



Christchurch City Council (CCC), located on New Zealand's South Island, is responsible for the social, economic and cultural well-being of Christchurch and its inhabitants. It has responsibility for a range of local services, from roads, waste collection, parks to water and sewerage treatment. CCC manage 8 wastewater treatment plants and around 180 pumping stations connected by over 1800km of pipework.

Yokogawa have worked with CCC since establishing an office in the region in 1999. Throughout this time highly reliable and accurate flow and pressure instruments have helped CCC meet customer demand for water related services. In 2009 CCC needed to improve control and visibility of around 180 highly distributed pumping stations, linked back to the main control room. Improved status monitoring of the pumping stations and a need to reduce maintenance overheads were key drivers. After a lengthy and detailed evaluation process, CCC selected Yokogawa's Stardom network controller due to reliability and connectivity benefits. The outcome over the last ten years has seen a notable reduction in maintenance requirements and the ability to react rapidly and effectively to specific issues.



SUCCESS STORY

Rangitata Diversion Race (RDR)

When RDR Management undertook a major project to improve control and visibility of the gate flows and take-offs on the Rangitata Diversion Race in the late 2000's they selected Yokogawa New Zealand as preferred supplier due to their reputation for quality, active presence on the South Island and an ability to minimise total cost of ownership.



When New Zealand's Public Works Department initiated a project in 1937 to divert water from the Rangitata River on New Zealand's South Island to the Rakaia River crossing the Canterbury Plains, it was a dream come true for the regions pioneering farmers. This 67km long race provides water to over 600 farms via a canal network and was anticipated to improve their production five or six-fold. Taking 20 years to reach full capacity it has since transformed farming in the district.

As a means of better managing water distribution and compliance, RDR looked to enhance the level of automation and visualisation across the scheme. Connected via a radio network, over 600 farm take-offs and seven main stations connect back to the central monitoring station at Ashburton. Covering an area of over 66,000 hectares, this was a huge project which not only needed the reliability that Yokogawa are renowned for, but also a high degree of integration between controllers, RTU's and SCADA. Selecting FAST/TOOLS as the SCADA of choice was the first step, a platform synonymous with openness since its launch in 1975. Linking to FAST/TOOLS are seven Stardom RTU's at the main canal take-off's, which in turn link to over 600 FA/M3 low cost high performance controllers. These monitor and control the smaller take-offs to farms feeding information back via the Stardom RTU's. Visualisation is provided to both RDR and farmers using Stardom and FAST/TOOLS web browser capability, providing timely and accurate information for effective water distribution .



Chemical

Yokogawa have contributed to the safe and stable operation of customer process plants as a leading supplier of control, safety, instrument and analytic solutions to the chemical industry for thirty years. As the processes, products and value chain of the chemical industry become more sophisticated, so too do customer needs and expectations. This is especially so due to increased attention from cyber criminals.

Yokogawa provide industrial products, solutions and services to meet those needs by leveraging its wealth of experience in chemical and related applications. We have enhanced our portfolio to meet specific needs such as Energy Management to further optimise our customers plant operations. Combined with our capabilities developed in other related industry segments, we are ideally placed to provide best practice and collaborative solutions to tackle even the most complex of applications.

With many Chemical companies in the region located in remote areas, it is important to select a partner who can not only provide a competitive and advanced solution but can also support it throughout its lifecycle. Yokogawa's Technical Service and Support reach covers all these areas, providing assistance on a 24/7 basis as required. This is especially important to Chemical industry customers who located close to mines and who supply products that are critical to mining operations.

The world's leading chemical companies' partner with Yokogawa as a full scope automation and instrumentation partner to achieve operational excellence, reliability and safe operations. In a segment which is under significant cost and competitive pressures from other regions, we are committed to delivering solutions across the entire plant lifecycle that meet the evolving needs of the industry in a collaborative, supportive and cost-efficient manner.



Unlocking data
from within
the process

Using data
to streamline
processes
& reduce cost

Safe, Secure
& Reliable
operations

Tackling
human resource
challenges

Reducing
process
variability

Base Chemical | Speciality & Fine Chemical | Industrial Gases | Petrochemical | Biofuel

SUCCESS STORY

CSBP Kwinana

When CSBP were reviewing their process control requirements in the early 1990's, they looked for suppliers who could not only provide a technologically advanced solution, but one who had significant engineering and technical support capabilities in the region. After an extensive review, one supplier, Yokogawa stood out above all others and have remained a close process partner ever since.



CSBP are a major manufacturer and supplier of chemicals, fertilisers and related services to the mining, mineral processing, industrial and agricultural sectors. Part of the Wesfarmers group, CSBP have been manufacturing at Kwinana since 1967 and have grown over the years to incorporate manufacturing processes from other sites and organic growth.

CSBP focused on several aspects when selecting their new process automation platform. System reliability, connectivity, proven chemical industry experience as well local engineering and support were top of the list. On completion of the review, Yokogawa's Centum CS was selected in 1994. This was the first installation of CS outside of Japan, but such was the confidence in reputation for quality of Yokogawa product along with the local engineering and technical service capabilities, the risks were viewed as minimal.

Over the intervening years, CSBP have grown to depend on Yokogawa across the site as its influence has grown and more instrumentation connected. Local engineering and technical support capabilities are as important as ever as CSBP set themselves the highest possible goals for quality, safety, availability and reliability. Customer first is a mantra CSBP have lived by since their foundation in 1910 as Cumings Smith & Co, a principle they are proud to continue.



SUCCESS STORY

YARA Pilbara Nitrates

When Yara were building a new fertiliser plant on the Burrup Peninsula in Western Australia in 2003, they were acutely aware of the remoteness of the plant and the harsh environmental conditions. There was an acute need for technologies which were rugged, highly reliable and easily maintained. They also knew that skilled human resource to operate and maintain the plant would be in short supply, so when the decision was made for process control, safety and instrumentation, Yara turned to Yokogawa Australia to address these issues.



The Yara liquid ammonia plant is one of the largest ammonia production facilities in the world, with a production capability of approximately 850,000 metric tons annually. This was further added to with the downstream addition of the Yara Pilbara Nitrates Technical Ammonium Nitrate (TAN) plant (joint venture with Orica), which converts ammonia into a material crucial for the mines located throughout the Pilbara.

Yokogawa have a significant presence in Western Australia, having undertaken some of the largest Oil & Gas, Mining and Chemical projects in the region. With a large engineering and Technical Services group based out of Perth providing access to engineering support as well as remote access capability, Yara's concerns on being able to access support services were quickly alleviated. Product reliability was also critical, with Yokogawa's excellent reputation for quality of their Centum DCS, ProSafe process safety system and instrumentation being stand-out during the selection process.

Yara further improved process monitoring through the addition of a Yokogawa DTSX as a pipeline leak detection system. Ammonium nitrate is a hazardous substance with Yara looking to ensure any leaks were quickly contained through early detection, with DTSX using fibre-optics to rapidly identify even small temperature change. This also allowed Yara to comply with stringent EPA environmental requirements.



Base Chemical | Speciality & Fine Chemical | Industrial Gases | Petrochemical | Biofuel



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