

Well-being

Life Innovation Business



Sustainable Development Goals (SDGs)

In September 2015, the United Nations General Assembly adopted the 2030 Agenda for Sustainable Development, a 15-year blueprint for protecting our planet and achieving a better future for all. It is an ambitious challenge to be implemented by all countries, and it pledges that no one will be left behind. The 2030 Agenda includes 17 Sustainable Development Goals (SDGs) and 169 targets. Among them are broad agendas – such as poverty, health, education, climate change and environmental degradation – that are relevant to companies.










SUSTAINABLE DEVELOPMENT GOALS 17 GOALS TO TRANSFORM OUR WORLD



Achieve balance by generating social and environmental benefits at the same time as economic benefits, and aim for the growth of each country

Yokogawa's Sustainability Goals (Three Goals)

In line with the direction taken by the SDGs, Yokogawa established its own Three Goals toward 2050 for achieving sustainability. They are: Achieve Net-zero Emissions (Stopping climate change), Make the Transition to a Circular Economy (Circulation of resources and efficiency), and Ensure Well-being (Quality life for all). We believe that our role in contributing to the realization of a sustainable society is to aim for achievement of the Three Goals and solve the challenges of society with our customers.

Vision toward 2050 (the Three goals)	Achieve Net-zero emissions	Ensure Well-being	Make transition to Circular economy
Business focus areas	Renewable and low-carbon energy Contribute to avoidance of CO ₂ emissions through offering of renewable energy and LNG solutions	Life innovation and safety Support people's health and prosperity through provision of life-innovation solutions and assurance of safe and comfortable workplaces	Energy saving and resources Contribute to sustainability and economic growth through stable and efficient operation, and resource regeneration
Related SDGs	 	  	   

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Goal 2: Zero Hunger

End hunger, achieve food security and improved nutrition and promote sustainable agriculture
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Goal 3: Good Health And Well-being

Ensure healthy lives and promote well-being for all at all ages

* Well-being refers to the state of being healthy, happy and socially comfortable
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Goal 8: Decent Work and Economic Growth

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all



Basic research

Live Cell Imaging

- Has a proven track record of 30 years in the field of live cell imaging
- Minimizes damage to living cells and organisms through an original scanning method; capable of capturing subtle, fleeting biological phenomena
- Supports advanced research around the world with more than 3,000 units sold

Confocal Scanner Unit



Images provided by Dr. Kazuo Yamagata, Department of Genetic Engineering, Graduate School of Biology-oriented Science and Technology, Kindai University

Super-resolution Confocal Scanner Unit

CSU-W1 SoRa NEW

The unit is equipped with a super-resolution option that achieves XY resolution of about 120 nm, which exceeds the diffraction limit of the conventional confocal scanner unit. It retains reduced photo bleaching and photo toxicity as well as ease of use. Imaging can be carried out while switching between confocal observation and super-resolution observation.



Image provided by Dr. Kaoru Katoh, Biomedical Research Institute, National Institute of Advanced Industrial Science and Technology (AIST)

Live Cell High-content Analysis

- Measures various reactions of live cells in detail and with speed
- Increases efficiency of drug discovery, chemical compound evaluation, cellular function clarification, etc.
- Meets the needs of cutting-edge life sciences research

High-throughput Cytological Discovery System

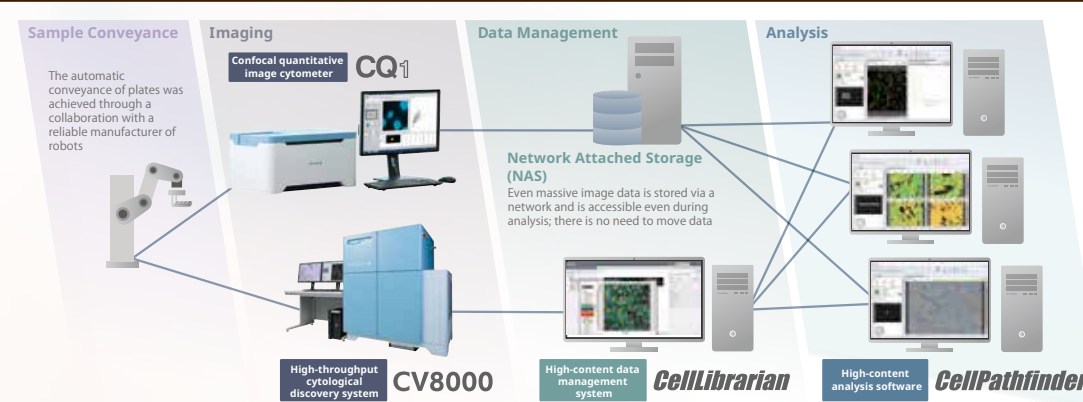


Confocal Quantitative Image Cytometer



Images provided by Cochin Hospital, France

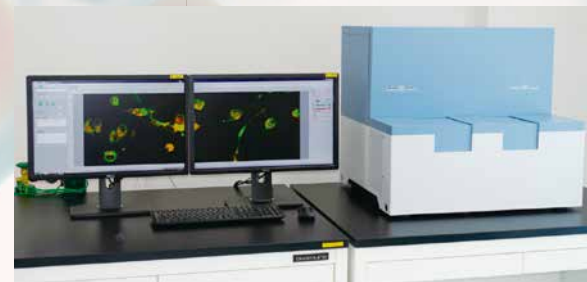
Feature extraction to graph creation and display are automatically carried out for various evaluation experiments that involve cells. To do so, 3D time-lapse images are taken automatically and image analysis is carried out with the CellPathfinder analysis software, which utilizes AI technology. We provide a total solution, from the taking of cell images to data management.



Single-cell Analysis Solution

- Confocal scanner technology applied to the analysis of taken images
- Single cells and cytoplasm are automatically extracted through the accurate control of a suction chip at the tip of a glass tube
- High-sensitivity analysis carried out utilizing single cell mass spectrometry, single cell gene analysis and other methods

Yokogawa opened the Shonan Life Science Co-innovation Center within Takeda Pharmaceutical's Shonan Health Innovation Park. Using the Center as the base, we launched the Single Cellome Co-innovators' Consortium and are engaged in efforts to promote and develop single-cell analysis solutions.



Validation

- Supports about 30 different types of equipment and devices including incubators, thermo-hygrostat chambers, refrigerators, and compressed air quality measurement and temperature mapping devices
- Supports the preparation of implementation plans to the actual operation and recording of results

Calibration

- Regardless of manufacturer, supports roughly 700 device models - including thermometers, pressure gauges and flow meters - used by various departments, such as manufacturing, inspection, testing and development

* Yokogawa acquired NKS Corporation, which specializes in validation and calibration operations, in December 2018



Development

Cell-Based Manufacturing Solution

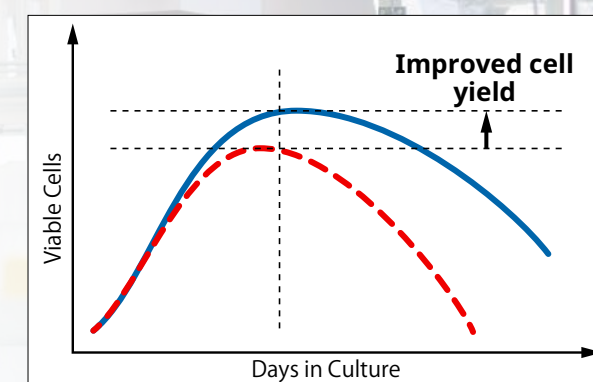
Advanced Control Bioreactor System

Equipped with process analytical technology (PAT), the system contributes to improving the yield and quality of biopharmaceuticals.

- Carries out inline monitoring of the state of cells and incubation
- Executes predictive control based on inline monitoring data and automatically maintains nutrient concentration at constant levels
- All-in-one package that includes devices required to culture cells



Under development



Biological Contamination Management Solution

Biological Contamination Inspection System

Yokogawa is aiming for the swift determination of microbial contamination in food, pharmaceutical and other industries. It is expected to contribute to the reduction of operating costs and lead times in the manufacturing industry.

- Microbial genetic testing that can be carried out regardless of the skill of operator
- Swiftly determines whether there is microbial contamination in food, pharmaceutical and other industries
- Reduces operating costs and lead times in the manufacturing industry



Under development

Regenerative Medicine Quality Management

Under development

- Quality cannot be guaranteed in manufacturing using cells as the starting point because of the lack of available definitive standards and the large variations in quality
- Expectations in the field of regenerative medicine are for the stabilization of quality, reduction of manufacturing costs, and efforts toward automation and optimization; need exists for integrated data management through the adoption of IT systems
- Yokogawa aims to develop an integrated quality management system that consolidates and links information related to the three elements of manufacturing: manufacturing process, quality testing and manufacturing environment



Laboratory Information Management System

- Improves quality and achieves stability, from the improvement of quality in the manufacturing process to the streamlining of inspection and analysis operations



- Laboratory information management package for the manufacturing industry CIMVisionLIMS
- Laboratory information management system Lab-Aid
- GMP management operations support package CIMVisionQA (Domestic sales only)



Logistics & service

Enterprise Resource Planning (ERP)

- Achieves real-time management grounded in manufacturing



- ERP system Microsoft Dynamics 365
- ERP after service package ServAir

Production Management

- Maintains and improves QCDS (quality, cost, delivery, service) in addition to production plan and production progress management



- Production management package for the manufacturing industry mcframe
- Production scheduler FLEXSCHE

Manufacturing Execution

- Resolves various issues through tailored response to manufacturing processes unique to industry types



- Manufacturing Execution system package for Pharmaceutical Plants CIMVisionPharms (Domestic sales only)
- Food production management package CIMVisionLIBRA (Domestic sales only)

Asset Management

- Minimizes costs while promptly achieving effective maintenance management



- Computerized Maintenance Management system eServ
- Unusual device condition automatic analysis package DUCSONEX (Domestic sales only)

Process Control

- Minimizes lifecycle costs through integrated monitoring and control



- Distributed control system (DCS) CENTUM VP
- Batch management control package VizBatch (Domestic sales only)

Field Instruments

- Contributes to the improvement of customer operations and environment through high reliability



- Differential Pressure and pressure transmitter
- Sushi Sensor (Industrial IoT sensor)
- Coriolis, Magnetic and vortex flowmeters

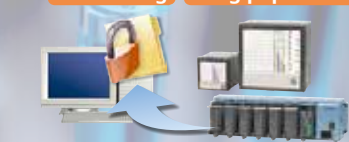
* The products and solutions above are in the OpreX™ lineup, the comprehensive brand for Yokogawa's industrial automation and control business

Environment Monitoring System

- Provides centralized management of environmental data, such as temperature, humidity and pressure varied among rooms, that are regulatory requirements for conforming to Good Practice (GxP) Guidelines; enables going paperless while supporting data integrity



- Unified Management of Data Supports data integrity Monitoring Going paperless



Life Innovation Business Locations

Headquarters



Kanazawa Office



Shonan Life Science Co-innovation Center



Global Network



Information is distributed on a regular basis.
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