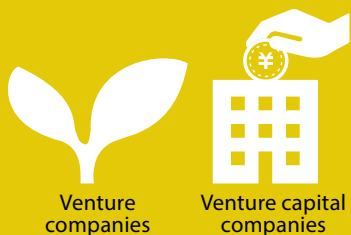


Business Activity

Investment Support Through Open Innovation



Customer Satisfaction



88.4%

Procurement Partner Quality Management System Assessments



Conducted for

84 companies

Materiality 1

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Materiality 1

Creating Social Value Through Core Technologies



Reason for Priority

Companies are considered public institutions and have a responsibility to contribute to the sustainable development of society through transparent and fair business activities.

Moreover, in recent years, amidst the emergence of social issues of global importance, companies are required to innovate in ways that will transform social systems and lifestyles, and to contribute to solving these issues through their businesses.

Nikon's Approach

Imagine society in 2030, it is likely that not only will people's values, lifestyles, and outlooks on life shift, but so too will social frameworks on topics like climate change and resource scarcity shift. Furthermore, there will likely be an accelerated shift in technologies, such as with the advent of Industry 5.0. In the midst of this mega-shift, we believe that people will focus more on creative, self-fulfilling work and value-driven consumption, and that there will be greater co-creation between humans and machines.

In April 2022, Nikon announced a new Medium-Term Management Plan in which its Vision 2030 (for the year 2030) is to become *a key technology solutions company in a global society where humans and machines co-create seamlessly*.

Over its 100 years of history, Nikon has cultivated ultra-precise *Monodzukuri* (manufacturing) capabilities, eminently present in its lithography systems. It has also cultivated a brand that has popularized digital cameras worldwide and greater trust among its stakeholders. Leveraging these strengths, we will provide solutions closely tied to customer experience value and the generation of innovation, and expand possibilities for people in a world where humans and machines co-create more seamlessly. We will also contribute to the realization of a prosperous and sustainable society by providing innovative value that will help address societal and industrial challenges, including those presented in the SDGs.

Nikon's Social Value Creation

Contributing to Society Through Business Activities

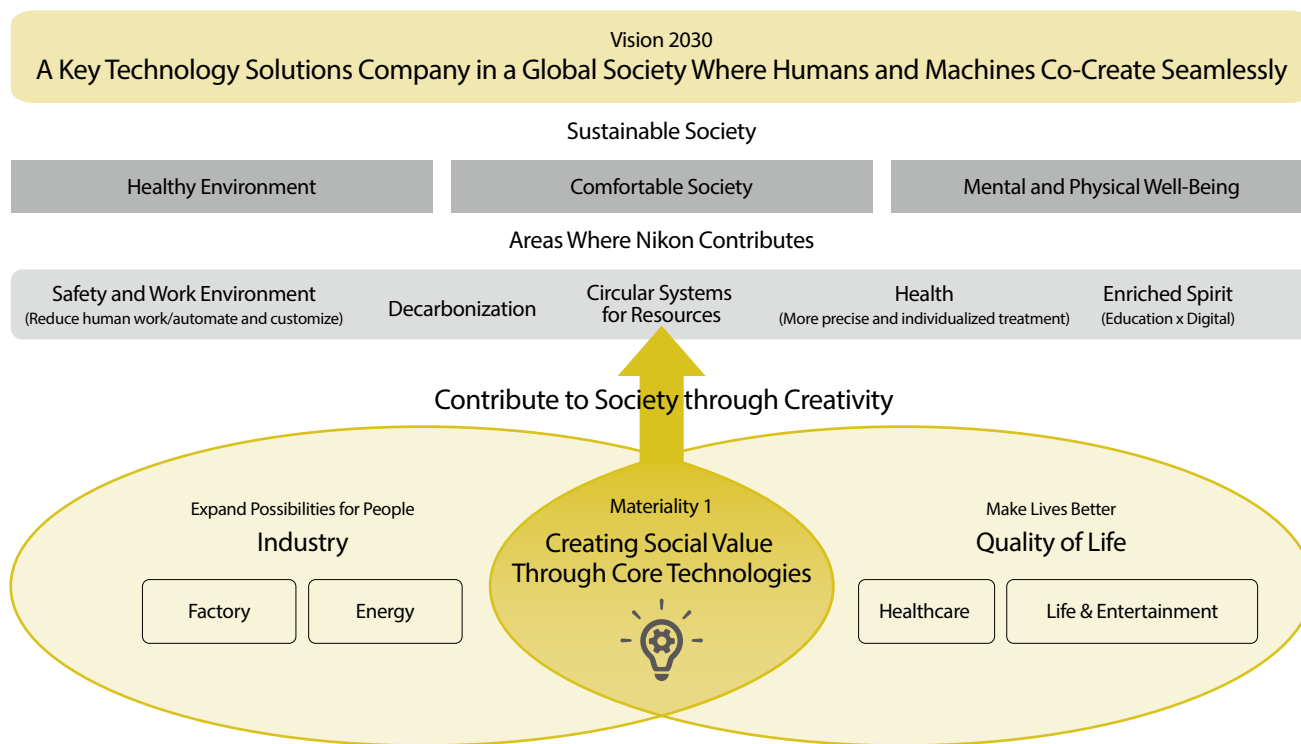
The Nikon Group aspires to be a company that contributes to the sustainable development of society through the creativity of new value through its businesses based on its Corporate Philosophy of Trustworthiness and Creativity. In its Sustainability Policy, we are committed to helping solve environmental and social challenges as well as achieve Sustainable Development Goals (SDGs) through our business activities by delivering unique Nikon products and services. In addition, we have selected *Creating Social Value through Core Technologies* as a materiality. To put this into practice, in April 2022, Nikon announced a Medium-Term Management Plan with sustainability strategy as one of its management foundations. Under this plan, our Vision 2030 is to become a *key technology solutions company in a global society where humans and machines co-create seamlessly*. With this, we will focus our efforts on building industries that will expand possibilities for people and quality of life (QOL) that will make lives better in the fields of Factory, Energy, Healthcare, and Life & Entertainment. Specifically, in the Factory area, we will become a lead player in flexible manufacturing systems with Robot Vision and Material Processing. We will also contribute to the diversification and sophistication of devices with digital lithography. In the Energy area, we will leverage optical processing machines to promote energy efficiency improvements with fine processing and re-use with additive processing. In the Healthcare area, we will support drug discovery that lightens the burden on doctors and patients, aiming to achieve regenerative medicine for everyone. In the Life & Entertainment area, we will support a society where

people are connected in ways that transcend time and space and virtual and reality with image infrastructure production technologies.

In a world where humans and machines co-create more seamlessly, we will use these efforts to contribute to

the achievement of the SDGs and the realization of a sustainable society, especially in the areas of safety and work environment, decarbonization, circular systems for resources, health, and enriched spirit.

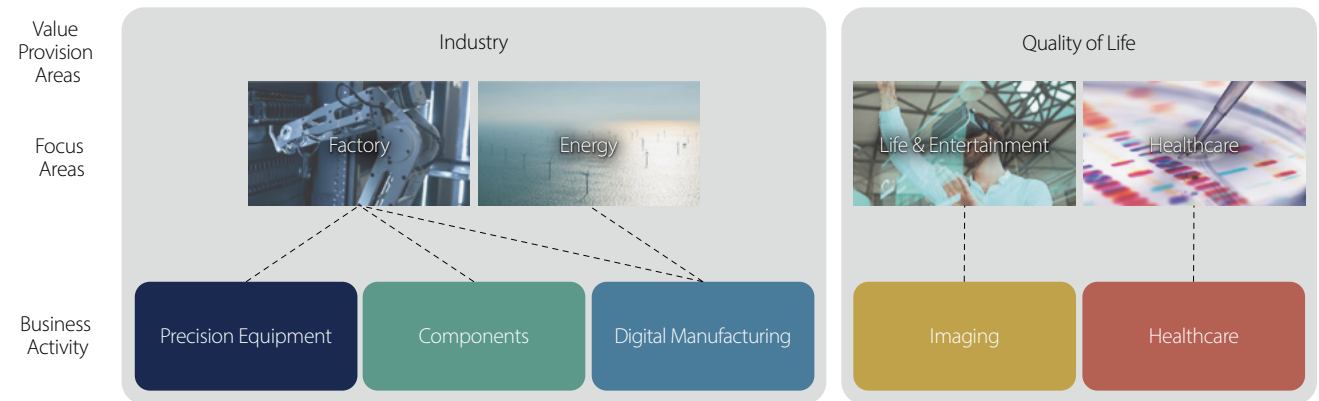
● Contributions to Society Through Creativity



Areas and Businesses of Contribution in the Medium-Term Management Plan

In its Medium-Term Management Plan, Nikon aims to use its Components, Digital Manufacturing, and Precision Equipment businesses to provide value in the area of Industry. Likewise, we aim to use our Imaging Products and Healthcare businesses to provide value in the Quality of Life area. In this context, we aim to contribute to a sustainable society and grow our own company by focusing on five areas, with the delivery of integrated solutions, including finished products, services, and components as growth drivers.

● Areas and Businesses Where Nikon Provides Value



● Contributions Through Business Activities

Areas Where Nikon Contributes		● Precision Equipment ● Components ● Digital Manufacturing ● Imaging ● Healthcare
Safety and Work Environment (Reduce human work/automate and customize)	<ul style="list-style-type: none"> Contribute to work environments and public transportation infrastructure through sensing, imaging and displays, etc. Contribute to urban planning and resilient social infrastructure with image analysis and optical telecommunications technology Contribute to space industry and technology by providing satellite modules, etc. 	
Decarbonization	<ul style="list-style-type: none"> Increase energy efficiency in society with additive and fine processing using optics Enhance manufacturing efficiency in robots with sophisticated hands and eyes and device manufacturing processes Contribute to a society where people connect transcending time and space and real and virtual leveraging image production technologies Contribute to a healthy global environment with longer lasting light sources and more durability in our products 	
Circular Systems for Resources	<ul style="list-style-type: none"> Reduce the burden of waste and promote re-use among our customers through turbine repairs and ultra-precision processing, controls and measurement, etc. Aim to achieve a recycling society by strengthening equipment re-use and refurbished systems sales Leverage digitalization to help reduce needs 	
Health (More precise medicine and individualized treatment)	<ul style="list-style-type: none"> Reduce the burden on doctors and patients and support drug discovery with early and high-precision evaluation of ailments Achieve regenerative medicine for everyone with Contract Cell Manufacturing solutions Support medicine with high-precision robot modules 	
Enriched Spirit (Education x Digital)	<ul style="list-style-type: none"> Contribute to rich and creative visual expression and culture with imaging equipment and 3D and 4D technology, etc. Leverage cameras, microscopes and telescopes to stimulate interest in outer space and the natural sciences and contribute to Education and training that transcends time and space and real and virtual 	

Research and Development (R&D)

In Nikon, the Technology Strategy Committee, chaired by the President, utilizes analyses of macro social issue trends to analyze business environments and study and evaluate markets, developing new areas where Nikon should focus its efforts. For example, the Next Generation Project Division and the Digital Solutions Business Unit have been working together since the previous Medium-Term Management Plan's period to expand business for optical and EUV-related components, a short-term growth driver in the Medium-Term Management Plan, and materials processing and robot vision, a medium-term growth driver in this plan. Their cooperation has made steady progress in these areas. The Technology Strategy Committee also formulates technology strategies and R&D plans for existing businesses. These serve as the foundation for the Advanced Technology Research & Development Division's duties for R&D of technologies shared by business units and R&D of future technologies.

Open Innovation

Nikon has adopted open innovation, which actively utilizes external resources, as a means of accelerating the development of new products and services and the launch of businesses that will lead to solutions for expanding and intensifying social issues. Specifically, this includes not only corporate venture capital investment, but also direct investment in start-up firms through the establishment of a private fund, as well as arrangements for providing support and incubation for start-ups and employees that have developed technologies or ideas with strong potential. As of May 31, 2023, we are providing investment support to 18 venture companies and 13 venture capital firms.

● Investment Support Through Open Innovation



18 Venture companies

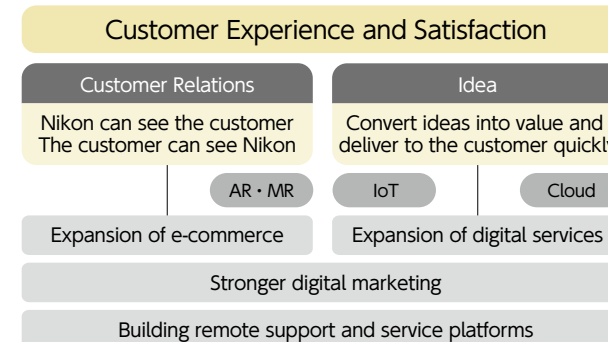


13 Venture capital companies

Digital Transformation (DX)

In the new normal after the emergence of COVID-19, companies have been using digital technologies to transform business models and digital transformation (DX) to leverage establish competitive advantage. This DX has accelerated and become essential to improve customer experience and satisfaction and to innovate to meet future needs. Knowing this, Nikon intends to strengthen DX as one of its management foundations in its Medium-Term Management Plan. Specifically, we will enhance the value we provide to customers by expanding our e-commerce and digital services centered on the Imaging Products business, as well as strengthening digital marketing by sharing and harnessing customer data internally to improve planning accuracy and to make dynamic sales proposals. We will also enhance this value by developing remote support and service platforms in the precision Equipment business. In addition, to support these DX initiatives, we will work to overhaul the Group's IT infrastructure systems, improve its IT literacy, and develop strong cyber security and data governance.

● Customer-Oriented DX



Value Provided Through Business Activities (1)

Areas where Nikon contributes: Decarbonization

Riblet Processing that Contributes to Carbon Neutrality

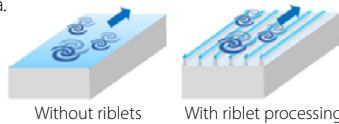
Shark Skin-like Riblets

A riblet is a biomimetic technology based on the microscopic pattern of shark skin. Sharks have evolved the surface of their skin to have a longitudinal grooved shape, reducing the frictional resistance of contact with the water and making it possible to swim faster and more efficiently. Riblets are a microstructure consisting of artificial longitudinal grooves inspired by this evolution. Research began in this area several decades ago, and swimwear applying this microstructure to its surface garnered great attention after it led to new world records.



Riblet Mechanism for Reducing Frictional Resistance

Riblets reduce contact frictional resistance by using vertical grooves to create distance between vertices and the wall surface and reduce the contact area.

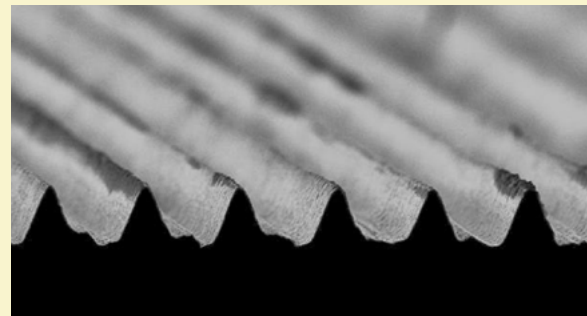


Benefits of Riblet Processing

By imparting a riblet shape to an object moving against water or air, it can help reduce frictional resistance. For example, riblet processing on aircraft fuselages and race car bodies can reduce frictional resistance to the air, thereby improving fuel efficiency and increasing speed. Riblet processing on blades used in applications such as wind turbines, gas turbines, and jet engines offer potential improvements in energy efficiency.

Nikon's Unique Laser Processing Technology

Laser processing generally involves irradiating a laser beam onto an object, such as a metal, to cut or drill a hole. Nikon's high-precision laser processing technology enables the precise formation of minute three-dimensional shapes. In order for maximal riblet effectiveness, they must be machined to the optimum shape for each object. Nikon's technology allows for this. Furthermore, advanced optical technology enables



Cross-section of riblet processing (viewed under electron microscope)

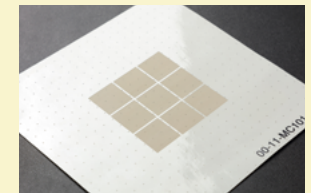
processing a wide variety of materials, including metals, resins, and fiber-reinforced plastics.

Proof of Concept Testing on Aircraft

It is said that about half of the resistance between an aircraft and the air during flight is the frictional resistance generated on the fuselage surface. Riblet processing on a fuselage surface is expected to reduce this frictional resistance, thereby improving fuel efficiency and reducing CO₂ emissions.

Since July 2022, Japan Airlines Co., Ltd. (JAL) has been engaged in proof of concept flights using an aircraft with a part of the paint film on the lower fuselage exterior panel using riblet processing by Nikon and O-Well Corporation. The aircraft, built using a Nikon construction method, has been confirmed to be sufficiently durable, with over 750 hours of flight time. Friction-reducing effects from the riblets have been confirmed by the Japan Aerospace Exploration Agency (JAXA).

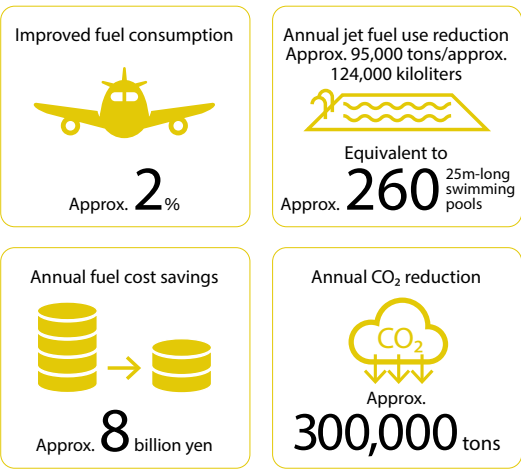
Furthermore, since October 5th, 2022, All Nippon Airways Co., Ltd. (ANA) has been operating two aircrafts equipped with riblet film manufactured using Nikon's processing technology attached near the roots of the main wings and on the upper surface of the fuselage. If the film is applied to ANA's entire fleet of aircraft, it is expected to improve fuel efficiency by 2%, reduce jet fuel consumption by approximately 95,000



Riblet film

tons, fuel costs by approximately 8 billion yen, and CO₂ emissions by approximately 300,000 tons per year.

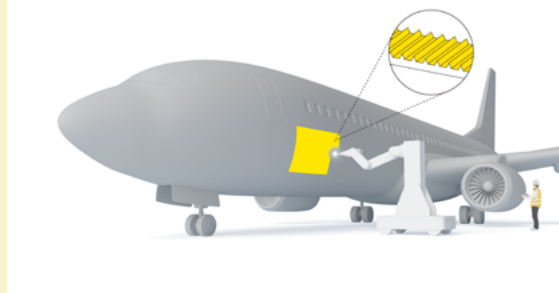
Estimated Benefit of Riblet Film Applied to ANA's Aircraft Fleet



*1 Effects calculated based on the following main conditions: Theoretical reduction effect of 6.17% x 80% processing of fuselage surface x 90% flight time at cruising altitude, applied to currently owned aircraft (calculated by Nikon)

Illustration of Riblet Processing on Aircraft

In the future, we aim to adopt Nikon-developed equipment for riblet processing on aircraft fuselages.



Expanding Utilization of Riblet Processing

As the effects of climate change become more pronounced and the accompanying damage and losses become more serious, efforts to improve energy efficiency and reduce CO₂ emissions are accelerating in various fields to achieve the 1.5°C target, which aims to limit the increase in global average temperature to 1.5°C. Amid this, the frictional resistance reduction benefits offered by riblets can be utilized in many products. In addition to aircraft and wind power generation, application fields are expanding to include gas turbines, helicopters, rolling stock, ships, drones, pumps, and household appliances. Nikon will contribute to the realization of carbon neutrality by developing businesses and providing solutions that take advantage of its unique riblet processing technology.

Value Provided Through Business Activities (2)

Areas where Nikon contributes: Enriched Spirit

Expanding Educational Possibilities Through New Video Technology

Volumetric Video: The Next Generation of Video Production Technology

Virtual reality (VR) and augmented reality (AR) technologies are widely used in media such as music videos and movies, enabling new kinds of visual expression. It also offers use in training and simulation in potentially hazardous environments, tours of museums and art galleries from the comfort of one's home or hospital, and in many other areas that contribute to the visual arts, industry, and social activities, enriching people's lives.

Volumetric video is attracting attention as the optimal technology for creating this kind of VR and AR content. This technology reconstructs 3D data based on image data captured by multiple cameras. It allows free viewpoint adjustment after the fact and enables conversion into data suitable for the content to be produced, making it a next-generation content production technology with great utility value.



A volumetric video production studio at Nikon Creates Corporation, a Group company

Making Volumetric Video Accessible via Portability

A typical volumetric video shoot requires a dedicated studio with dozens of cameras and a green screen background. It also requires significant processing time for images from the many cameras used.

Nikon's portable volumetric video capture system combines ordinary digital cameras with depth-sensing cameras, using the captured images and depth data to generate 3D data. As a result, just four camera units can serve as a shooting system, making image capture accessible even to the general public. The portable nature of the system allows data to be generated on the spot and used in real time, regardless of the shooting location.

New Video Technology Expands Educational Possibilities

Nikon hopes to expand the use of volumetric video to places of education. Therefore, we are participating in Scheem-D, a digitalization initiative for university education promoted by the Ministry of Education, Culture, Sports, Science and Technology, as well as collaborating with schools, local governments, and educational institutions to demonstrate a new educational solution using portable volumetric video.

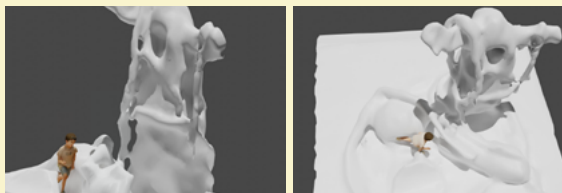
One demonstration was conducted at a class given at Setagaya Elementary School, affiliated with Tokyo Gakugei University. In this class, students were given a hands-on educational experience in which they were able to watch

their own clay sculptures and dance performances in VR, using 3D data generated from filming. The students were able to view the 3D images of their creations from the perspective they preferred, viewing dance movements from angles that were physically impossible. This technology is expected to offer children viewing information and experiences that they have never had before, thereby fostering their powers of discovery and sensitivity, and improving their motivation to learn.

Nikon is also working to commercialize delivering educational solutions using volumetric video. By spreading these solutions to more system to more places of education, we will contribute to improving the quality of education and expanding the potential of each and every child who will be the leaders of our future.



Volumetric video recordings of children dancing and clay crafts, demonstrating application in the confined space of a classroom



Visually synthesized dance and craft data

● Benefits of Using Volumetric Video in Education

Fostering the power of discovery	Students can freely choose what they want to see and easily compare 3D data to develop their cognitive ability
Improving motivation to learn	New experiences using the latest expressions via 3D and head-mounted displays (HMDs), etc., increase students' positive attitude toward learning
Use in a variety of subjects	Can be used effectively not only for subjects such as social studies, science, daily life, arts and crafts, and physical education, but also for extracurricular activities such as club activities and cultural festivals

Class Held at Setagaya Elementary School, Affiliated with Tokyo Gakugei University

Teacher's Comment

The class successfully achieved the objective of increasing the number of perspectives from which you can view an artwork. The experience of immersing themselves in a work of art they themselves created was very stimulating for the children.

Parent's Comment

It was very interesting to be exposed to a new kind of learning.

Children's Comments

When I actually went in, it was different than what I imagined. It was fun to see me moving around.

Value Provided Through Business Activities (3)

Areas Where Nikon Contributes Safety and Work Environment

An Ultra-Compact Smart Camera Helping to Evolve Manufacturing Sites

Aiding Automation, Labor Savings, and DX in Manufacturing

In the field of manufacturing, there is a growing need for DX to improve productivity, reduce costs, and create new products and services. Therefore, manufacturers are using automation and labor savings more and more in processing, assembly, transportation, and inspection through machine tools, inspection equipment, and industrial robots. In addition, it is increasingly likely that the work by highly skilled technicians and inspections relying on the visual acuity of skilled workers will be replaced by robots and systems that utilize smart cameras and AI. This not only increases the efficiency and productivity of manufacturing sites, but also improves the working environment and reduces labor shortages, allowing people to focus on work that only people can do, leading to the creation of new value and culture. Through the development and business deployment of smart cameras, Nikon will promote DX in manufacturing and contribute to solving social issues.

The LuFact Series of Ultra-Compact Smart Cameras

The LuFact series of industrial cameras were born from

Nikon's unique image processing technology accumulated over its long history in digital cameras. Separating the image processing unit from the camera head enables an ultra-compact design that offers installation freedom for industrial robots and various other applications. The new LuFact A2000, announced in November 2022, is equipped with a CPU and dedicated processor to enable edge AI computing. Image data (inspection data) from the camera head is processed and judged by the A2000-G AI image processing unit, removing the need for computers at the inspection site. Conventionally, information obtained at the inspection site has been sent to a server or cloud for processing, inspection, and judgment. However, with the edge collecting and processing the data, transmission frequency and data volumes can be significantly decreased, thereby reducing the burden on communication infrastructure and power consumption.



LuFact series ultra-compact camera heads

Case Study

An automatic screw tightening equipment at one of Nikon Group's manufacturing subsidiaries that produces encoders. This equipment automatically tightens the screws by analyzing the video captured by the LuFact smart camera to determine the screw tightening position on the workpiece. This contributes to labor savings and increased productivity.

