

Intellectual Property

Basic Approach

Mindful of the importance of intellectual property (IP) as a core source of competitiveness, TOPPAN implements IP initiatives to secure market advantages.

We believe that every IP activity should be aligned with business plans and R&D activities. We will acquire IP rights for products and services generated from the linkage between an IP strategy derived from our IP portfolio and a technology strategy focusing on market needs and the competitive landscape. Intensified IP initiatives will enable us to acquire IP capabilities that support our portfolio transformation and reinforce our management.

TOPPAN Group Basic Policy on Intellectual Property

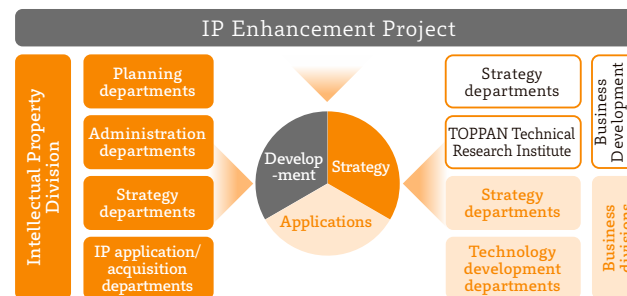
1. We develop proactive intellectual property initiatives from a global perspective based on an intellectual property strategy that further aligns our market-oriented stance and R&D activities by positioning intellectual property and intangible assets as important management resources to generate competitiveness in business.
2. We strategically use the intellectual property we have created to enhance corporate value and attain sustainable growth through the execution of Group management, higher business profits, and effective solutions for social issues.
3. We respect the intellectual property rights of others and take appropriate proactive/preemptive measures to avoid rights infringements when operating our businesses.
4. We comply with the laws and regulations pertinent to intellectual property rights across the world and exercise our legitimate rights appropriately when any of our intellectual property rights is infringed by a third party.
5. We appropriately and accurately use the trademarks we hold to enhance our brand value.

Governance

IP Management Framework

With the transition to a holding company structure in October 2023, we have built a framework where TOPPAN Holdings Inc. centrally manages the intellectual property rights owned by the main operating companies. Group synergies will be maximized through Groupwide IP utilization under the holding company structure.

Under this framework, the business divisions, R&D departments, and IP departments collaborate to implement IP activities across the Group. IP managers and personnel from the business divisions are jointly operating an IP Enhancement Project that addresses cross-divisional IP issues for the consolidated control of IP activities throughout the Group.

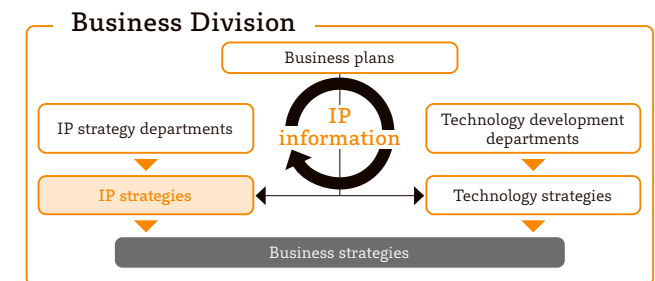


Promoting IP Strategy

TOPPAN is establishing a framework to enable business divisions to implement their own IP strategies in line with business plans. Measures implemented consist of the following:

- IP analysis to determine the direction of technology development, beginning from business planning (e.g., a clear understanding of positioning)
- Construction of an IP portfolio linked to technology development aimed at business advantage
- Planning and execution of IP strategies to counter competitor intellectual properties of interest.

Strategy, technology development, and IP departments develop IP strategy by preparing a joint IP strategy sheet. Business divisions use this sheet to identify TOPPAN's business strengths by reviewing market environments, technological trends, and the IP rights held by the Group and competitors. Once our strengths are confirmed, we search for the optimal approaches to applying for and acquiring intellectual properties.



Strategy and Measures

Issues and Responses

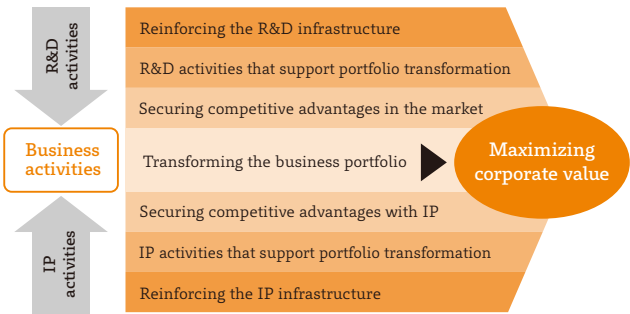
The Intellectual Property Division aims to ensure that intellectual property contributes to securing a competitive advantage for businesses and is working to build a Group intellectual property governance structure.

With the transition to a holding company structure in fiscal 2023, we integrated the intellectual property system and management structures within the Group, and in fiscal 2024, we enhanced intellectual property synergy throughout the Group.

Looking ahead, we recognize the need to establish a foundation for intellectual property activities capable of supporting the globalization of businesses and R&D activities. In fiscal 2025, we are aiming to strengthen the international intellectual property governance system by enhancing collaboration with overseas subsidiaries and agents. We will also promote the acquisition of practical skills overseas through dispatches of intellectual property staff around the world, among other initiatives.

Maximizing Corporate Value

IP initiatives support our business portfolio transformation to achieve the Medium Term Plan. Effective intellectual assets secure our competitiveness in business to maximize the corporate value of TOPPAN.



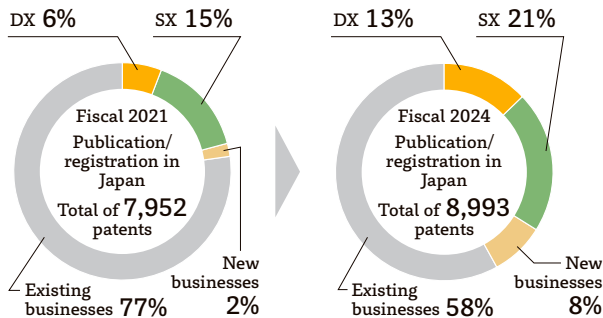
IP Initiatives to Secure the Portfolio Transformation

● A Patent Portfolio Consistent with the Business Transformation

We review our patent portfolio whenever necessary to ensure that the intellectual property rights we hold are aligned with our management policy under the Medium Term Plan. By actively patenting the results of research and development in growth businesses, we will be securing a competitive edge and contributing to the expansion of those businesses.

The establishment of the Intellectual Property Division in April 2022 has accelerated our patent portfolio transformation.

Patent Portfolio in Japan (incl. unprotected)



The ratio of patents TOPPAN holds in the growth businesses of “DX (Erhoeht-X™),” “SX,” and “new businesses” has been steadily increasing.

● Gaining Competitive Edge in New Businesses

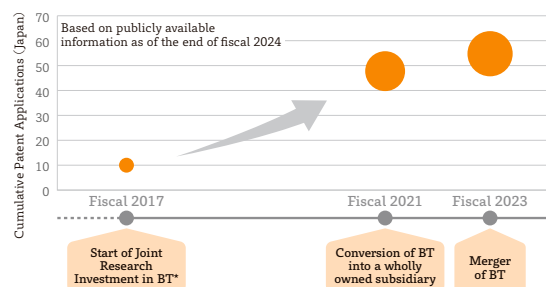
The IP departments work with the development departments and business strategy departments in the TOPPAN Group to build a strategic patent network that secures competitive advantages in prominent businesses we are developing on a priority basis.

3D ToF Sensor

In 2023, TOPPAN Holdings developed a first-generation 3D ToF sensor for robotics applications that delivers four performance features (long-range measurement, outdoor measurement, high-speed imaging, simultaneous operation of multiple units) with hybrid ToF™ technology, and has developed 3D ToF cameras equipped with this sensor. We also developed a new 3D ToF sensor with improved distance precision and faster imaging compared to the first-generation unit, while also reducing size and power consumption. This product contributes to even higher precision with 3D sensing for robotics and spatial recognition, enabling a wide range of applications.

Since entering the business in 2017, we have established highly unique 3D ToF sensor technology by fusing sensing development technologies owned by Brookman Technology, Inc. with our own semiconductor-related technologies, and have established barriers to entry through patenting proprietary technologies. We also keep know-how confidential according to the nature of the technologies. Through these activities, we are striving to secure a competitive advantage.

Total Patent Applications and Changes in Patent Asset Index (PAI*)



*PAI: Patent Asset Index
(Indicator of the competitive advantage and total value of the patent portfolio in LexisNexis® PatentSight®)

*BT: Brookman Technology, Inc.



Fire Suppression Film

TOPPAN Holdings has developed the fire suppression film FSfilm™ (Fire Propagation Suppressing Film™), which reacts to heat generated during fires and releases fire suppressing aerosol. FSfilm™ has excellent initial fire extinguishing properties, achieved by combining a fire suppressant that releases highly effective aerosol with TOPPAN's coating technology and the transparent vapor-deposited GL BARRIER film, allowing for long-term installation. It has a high installation flexibility with its both lightweight and space-saving characteristics, and since it does not emit harmful substances that could negatively affect people or the environment, it can be safely used as a fire propagation prevention measure to suit various locations and purposes, such as within lithium-ion battery cases, switchboards/distribution boards, and in waste bins at public

facilities. We have acquired basic patents for our proprietary barrier film and coating technologies, which are essential for ensuring long-term installation of FSfilm™, and are working to obtain patents tailored to various applications to secure a competitive edge.



Barrier film technology

Coating technology

Inside lithium-ion rechargeable battery cases

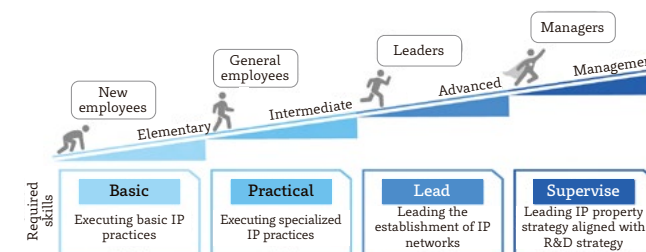


Inside switchboards and distribution board facilities

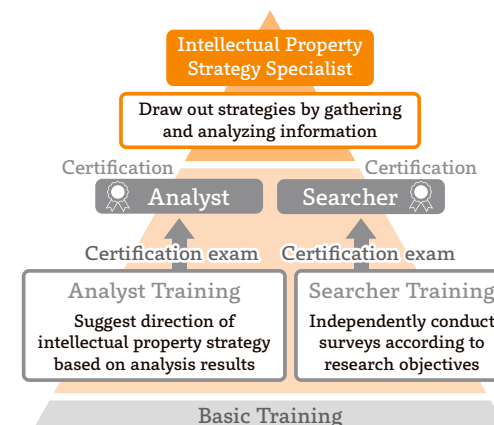


Developing IP Talent

An IP training system has been built for technical personnel employed by TOPPAN Holdings and its main operating companies, providing intellectual property training by job level, from new employees to management positions. By fiscal 2024, a cumulative total of about 4,500 employees will have completed the training, systematically gaining the knowledge required for technical staff, from the basics of the intellectual property system to the methods of formulating intellectual property strategy, thereby enhancing Companywide intellectual property awareness.



We also provide intellectual property strategy training and have established an in-house certification system for selected members of each business unit to cultivate specialists in intellectual property strategy.



Risk Management

Risks related to intellectual property are identified in "Business and Other Risks," which outlines major risk items relevant to the TOPPAN Group, and are incorporated into comprehensive risk management.

(For details on risk management related to sustainability risks, see section 2 of the Securities Report [issued in Japanese])

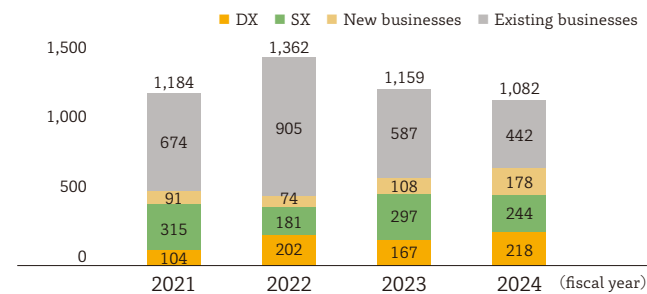
Data

Acquisition of Intellectual Property Rights

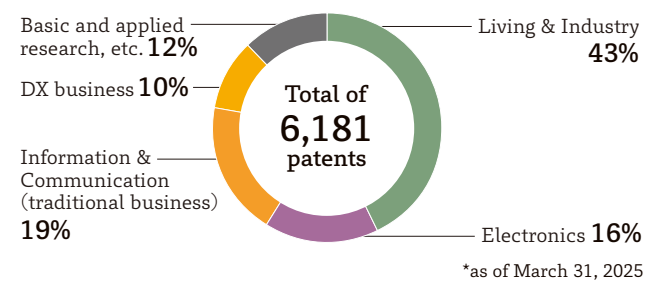
(TOPPAN Holdings Inc.)

*The number of applications, etc. may increase or decrease when we change our in-house aggregation methods.

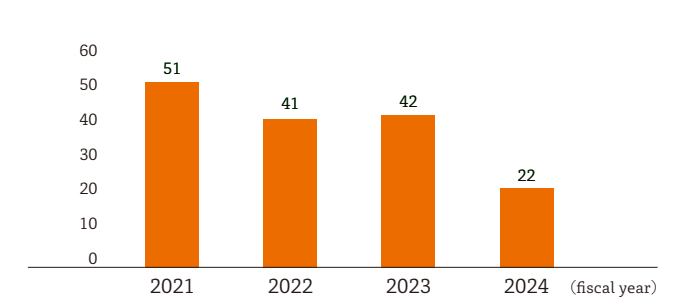
No. of Patent Applications (Japan)



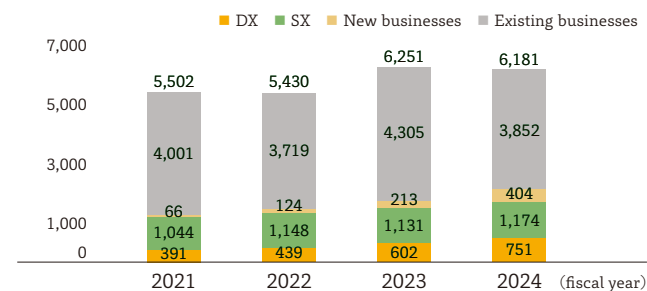
Patents Held by Business Field (Japan)



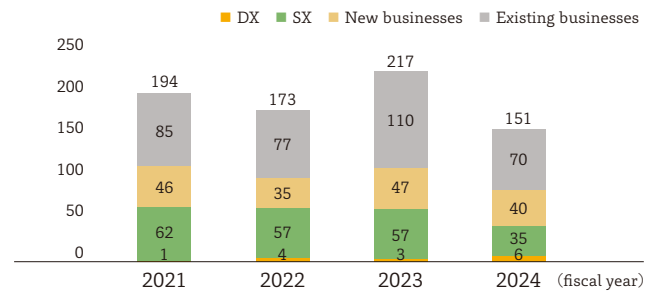
No. of Design Applications (Japan)



No. of Patents Held (Japan)



No. of Overseas IP Applications (PCT)



No. of Trademark Applications (Japan)

