

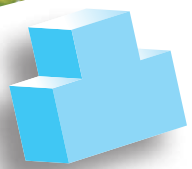
CONVEX

– International –













Special
Feature

Transforming the Business Portfolio
Bringing Toppan's security solutions to the countries most in need





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Notice from the Public Relations Division

CONVEX International is an internal magazine for the Toppan Group. The title, CONVEX, is based on the meaning of the Chinese character “凸”, which is pronounced *totsu* in Japanese and is the first character in the word *toppan*. In the same way that a convex lens focuses light at a single point, the name of the magazine expresses Toppan bringing together its “vibrant knowledge and technology.”

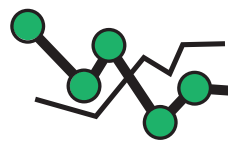
Cover Photo

The photo on the cover is a collage of Toppan Group security solutions and landmarks of African countries.

Special
Feature

Transforming the Business Portfolio

Bringing Toppan's security solutions
to the countries most in need



Toppan is working to drive its DX business and create new businesses under the Medium Term Plan's priority measure of "transforming the business portfolio" announced in May 2021.

Faced with this task, Toppan is working to develop a governmental ID business primarily through our subsidiary Toppan Gravity.

▶ What's a governmental business?

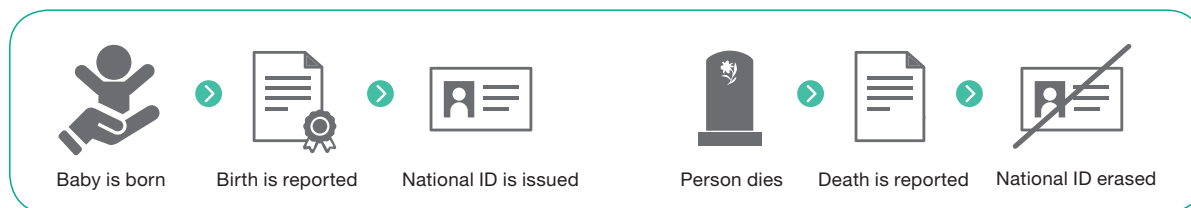
Governmental businesses support government services such as national ID systems, which are used to identify each and every citizen. While they vary country to country, such systems provide information that supports a country's foundation and must be securely managed. To that end, countries issue national ID cards to every citizen and introduce methods of managing information in national ID databases, for example, and such systems are seeing wider use.

Governmental businesses include:
Designing, manufacturing, and issuing national ID cards, passports, ballots, driver's licenses, etc.



Many developed countries have national ID systems in place

Proper national ID management protects the identities of a nation's citizens and allows them to avail of government services.



The right to have a legally valid ID is a basic human right

Column

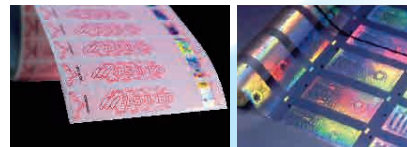
Goal 16 of the SDGs is to “promote just, peaceful and inclusive societies.”

Toppan is working to develop national identity schemes, identification systems, and identity document services to help achieve target 16.9: “By 2030, provide legal identity for all, including birth registration.”



► Why is Toppan getting involved?

Because Toppan has cultivated solutions for handling personal information through our passport and ID card businesses, and we have the technology and group infrastructure needed to support those solutions. We offer anti-counterfeit holograms used on banknotes, make e-passports containing IC chips and antennas, and manufacture passport printers that handle ID information.



Launched issuing center in Greece for passports, driver's licenses, and police IDs



1980s



MP300 Passport Printer
North America, Oceania



1990s



CP-400 Card Printer
Middle East, North America, Japan

2010
Kyrgyz banknotes



eCover for passport

2011
EU



2012
East Asia



2009
North America



Hologram for passport



2000s



E2000 Passport Printer
Asia, Africa



CP-500 Card Printer
Japan, Asia, Latin America, Africa, Middle East



PC Holograms in 2015
Turkish driver's license



eP600 Passport Printer
Middle East, Africa



► How will we tackle issues emerging countries face?

Let's take elections as an example. In emerging countries, it's often unclear who has voting rights. They may lack birth certificates, or national IDs aren't properly registered; reasons vary by country. That's why Toppan has come up with electoral solutions

from registering national IDs, registering biometrics like fingerprints, and issuing ballots through to managing and collecting votes. Our system can provide a wide range of election services, be it paper or electronic voting, according to each country's needs.

Electoral Solutions

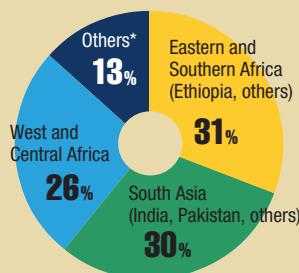


Column

In low- and middle-income countries, on average one in four children under the age of 5 (166 million) is undocumented. Of these 166 million children, half live in just five countries: the Democratic Republic of Congo, Ethiopia, India, Nigeria, and Pakistan.

It is estimated that 237 million children under the age of 5 currently do not have a birth certificate.

(Source: <https://www.unicef.org/jp/kodomo/sdgs/17goals/16-peace/>)



*Others
East Asia and Pacific
Middle East and North Africa
Latin America and the Caribbean
Eastern Europe and Central Asia

Breakdown of undocumented children under the age of 5

▶ Digitalization of national IDs picking up speed

Roughly 100 countries issue national ID cards around the world, many of which have transitioned to digital documentation or are planning to do so, triggered by demand for innovative e-government services.

▶ Digitalization of national IDs

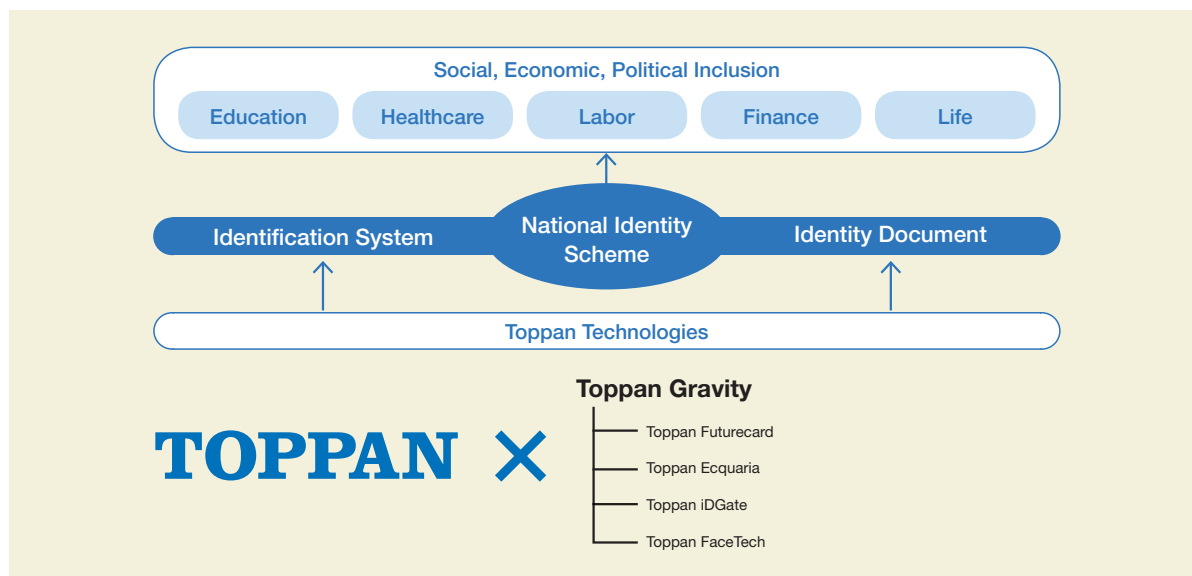
Advantages: Reduces fraud, combats identity theft, etc.
 Issues: No global standards in terms of functionality or other specifications; use cases supported differ by country

- (1) Basic electronic ID card
- (2) Integrated electronic voting, e-tax payment, e-healthcare and public transit pass functionality
- (3) Integrated digital services including biometric authentication

▶ The Toppan Group's business foundation

The Toppan Group has businesses dealing in security solutions across 217 locations.

By encouraging collaboration between these Group companies globally, we aim to further expand our security solutions.



► Why work on emerging markets?

Emerging markets such as Africa, the Middle East, and India are experiencing rapid economic development, yet have been some of the slowest to issue IDs. There are high expectations surrounding their ID markets as well as economic growth, and developed countries are making

various investments. The Japanese government, for example, sees that slow development of the telecommunications environment poses an issue and is investing in putting infrastructure in place.

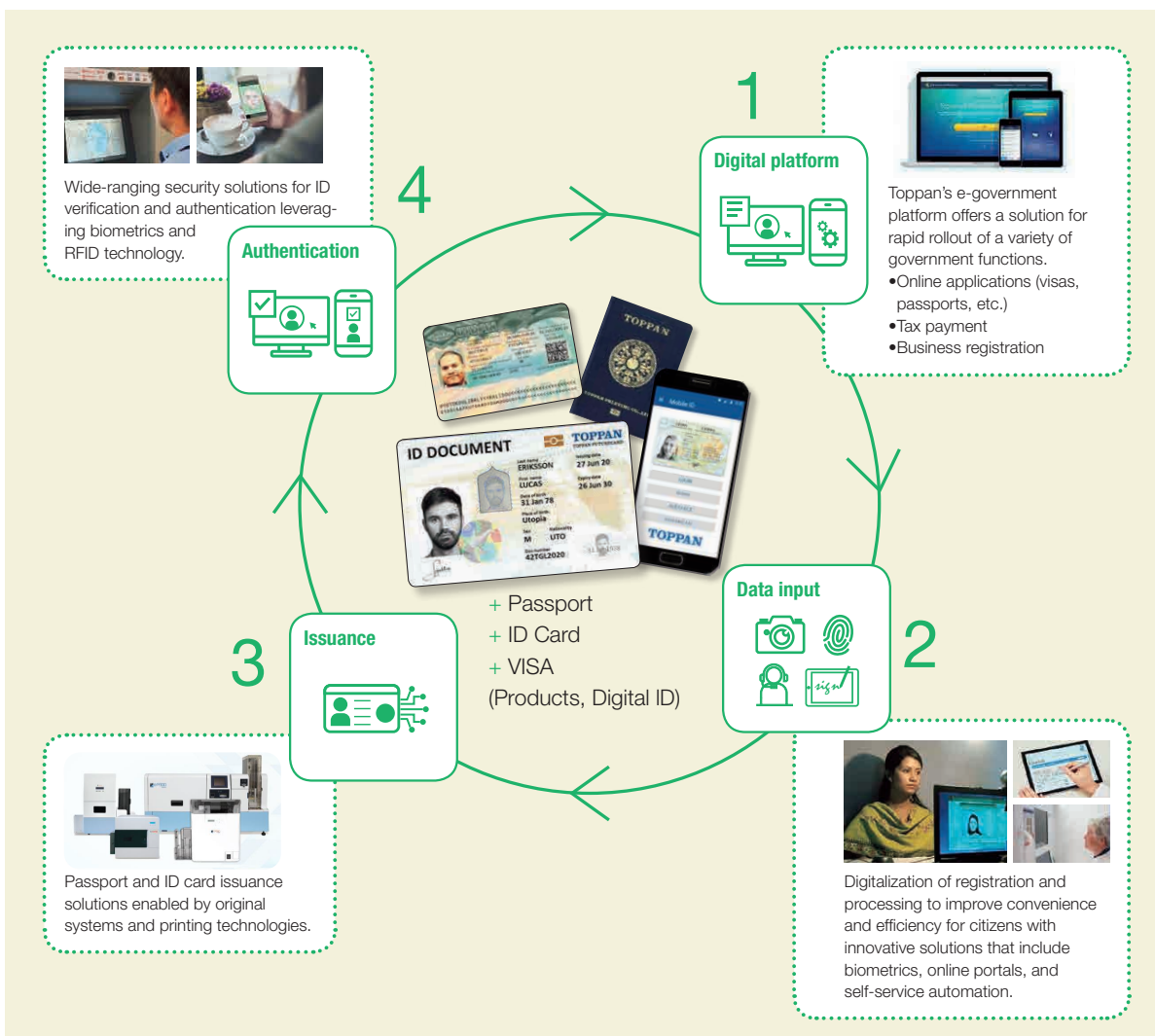
► Providing emerging countries with security solutions

Toppan is rolling out businesses in emerging markets such as Africa, the Middle East, and India primarily through our subsidiaries Toppan Gravity and Toppan FaceTech. Toppan Gravity promotes payment solutions alongside its ID

business, while Toppan FaceTech, which joined the Toppan Group in September 2021, is an IT system integrator with a track record of implementing driver's license and national ID systems in more than 20 countries.

► Toppan Gravity's security solutions

Toppan Gravity has developed end-to-end security solutions featuring a full scope of coverage. This includes a one-stop passport service complete with consulting spanning the entire process from application and registration through to issuance and delivery as the company works to transform itself from a product retailer to a solutions business.



About Toppan FaceTech



Serfies Serfontein

Managing Director

Tell us about the company

Face Technologies (now Toppan FaceTech) was established in 1993 with its main responsibility to create a database of all voters for the first democratic election in South Africa.

Face Technologies developed from this into a world-class solutions provider focusing into development, implementation, and commissioning of identification solutions in Africa and Asia.

Being part of a bigger group of companies which include, amongst others, Toppan iDGate, an AI-face recognition and mobile security token identity verification specialist, as well as Toppan Gravity, an end-to-end smart card solutions provider, will enable us to offer a diverse, state-of-the-art solution portfolio for the identity verification market, which is estimated by some researchers to double in the next 5 years.



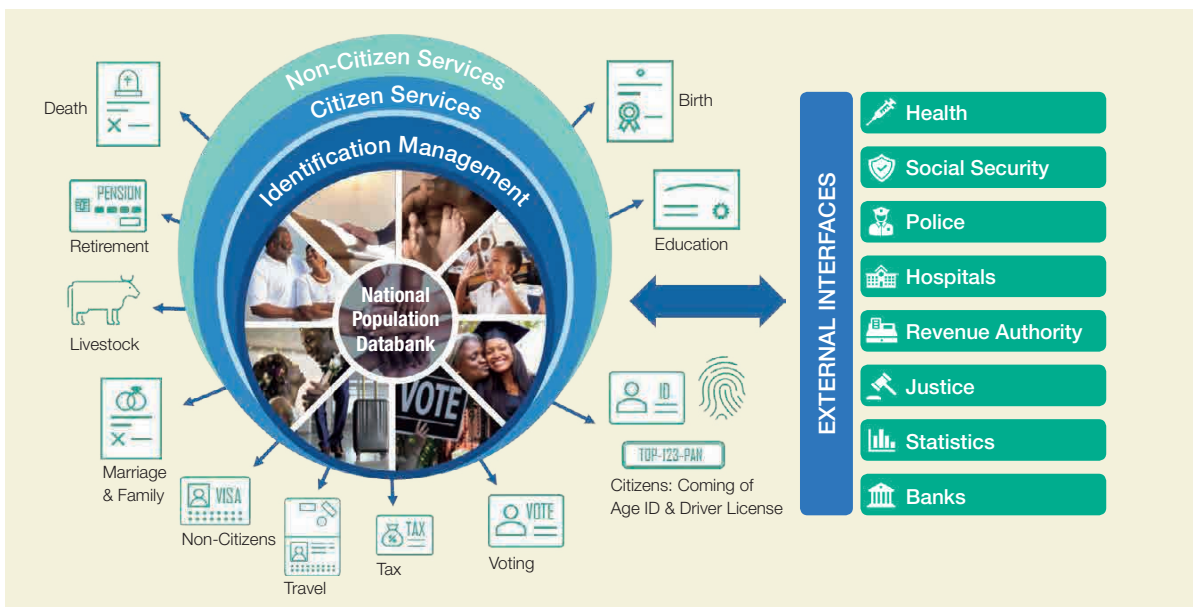
Relaxing and refreshing myself ▶

Golf is my favored sport and I enjoy playing golf around the globe and enjoy golf courses in South Africa, Thailand, Australia, and so on. I found golf to be my way to relax and refresh myself.

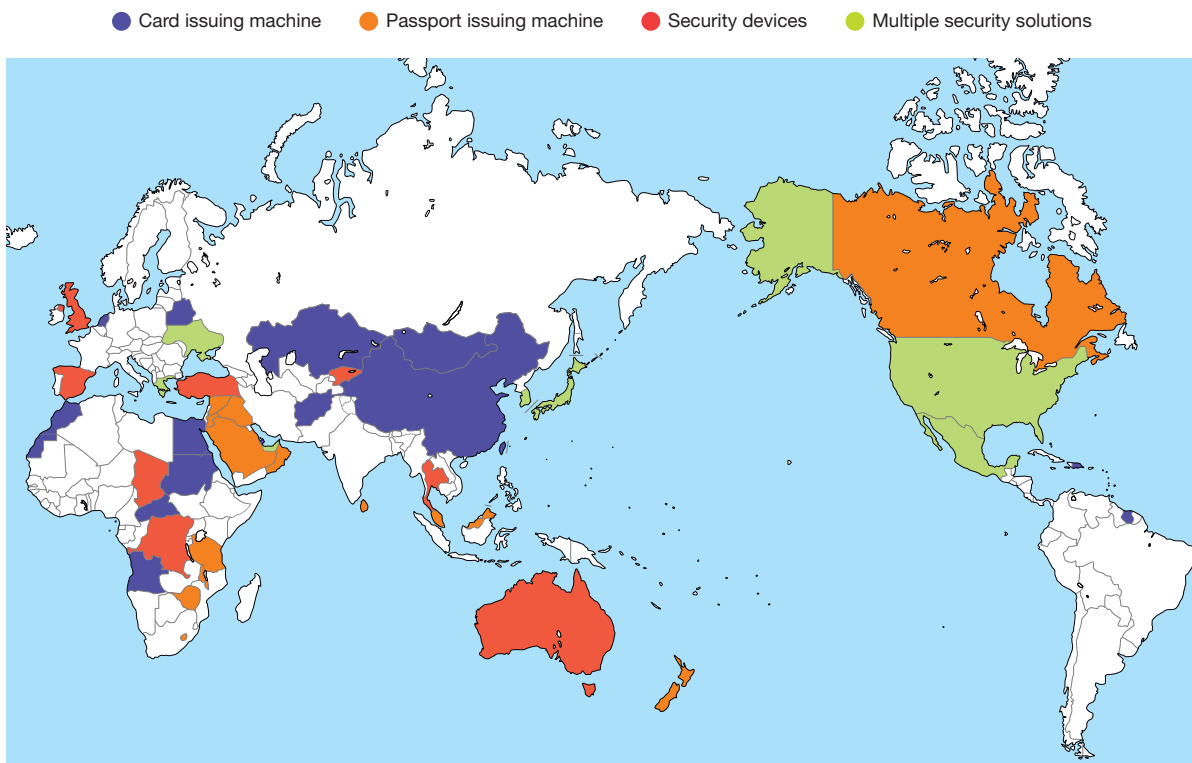
Founded in 1993 in South Africa, Toppan FaceTech joined the Toppan family in 2021. The company is an IT system integrator specializing in turnkey biometrics, cards and identification solutions for government identity programs implemented in over 20 countries in Africa, Asia and Europe.



- Location: Irene, South Africa
- Employees: 45
- Business: Security solutions using biometrics



Solutions implemented in emerging countries



| Country | Project |
|--------------|---|
| South Africa | Social Grants, E-Natis; Prodiba, Banks |
| Botswana | National ID and AFIS; Pension Payments |
| DRC | Police ID; Civil Workers; Military Census; AFIS |
| Ethiopia | Taxpayers' Biometric Registration and AFIS |
| India | Bihar State NREGS and AFIS |
| Kenya | Voter Verification Devices; Public Workers Registration |
| Lesotho | Electoral Registration System and AFIS |
| Malawi | Driving Licences; Motor Vehicle Registration System; AFIS |
| Mozambique | Driving Licences; Motor Vehicle Registration System; Voters Registration and AFIS |
| Namibia | Welfare Payments; Voters' Registration and AFIS |
| Nigeria | Taxpayers' Biometrics Registration and AFIS |

| Country | Project |
|--------------|--|
| Poland | Transport Information System |
| Senegal | Transport Information System |
| Sierra Leone | Voters' Registration System |
| Somaliland | Elections Card Production |
| Sri Lanka | Driving Licences (ISO 9001: 2008 Certified) eMotor Vehicle Registration System |
| Swaziland | Electoral Management System and AFIS Pensioners Registration & Management |
| Tanzania | Transport Information System |
| Uganda | Driving Licence and AFIS Police ID and AFIS, MOPS, PSV, ALS, MOW Archiving |
| Zambia | Driving Licences; Motor Vehicle Registration System |



Montse Bekker
Senior Developer / Development

My Motto ► GO BIG OR GO HOME! I follow this motto in everything I do. Do things properly! Facing work tasks half-heartedly produces half-hearted results. And if something can't be changed, go home! I have faith in my abilities and try to overcome all obstacles. There is always a solution to every problem.

If not at this job, what would you have tried doing? ► I would also be happy working in events planning, as I thrive on creating joyful environments where everyone feels special.

Sierra Leone

- Voter registration (under very difficult conditions)
- 2.7 million voters registered
- 800 voting kits delivered in 68 days



Mozambique

- Set up registration forms for voter registration
 - 10 million voter registrations
- Creation of a database that can be used for multiple elections



Botswana

- Provide national ID and related solutions
- Providing external interfaces that allow integration with 16 other systems including elections, passport, birth and death, vehicle and driver license systems



Ethiopia

- Provide tax management solution



George Mills

Solution Analyst / Software Development

Job Attraction ▶ One thing that attracted me to my job was the chance to travel. I have worked on many different projects and met many interesting people on my travels across South Asia and Africa. In this job, there is always an interesting project to look forward to and new experiences to savor.

If not at this job, what would you have tried doing? ▶ If not at this job, I might have become a pilot due to my interest in aviation. That would have also satisfied my love of travel!

Job Attraction ▶ I am the Quality & Risk Manager and a DevOps Specialist. My aim is to improve operational effectiveness and identify risks, and I work with other departments to improve strategies for better service delivery. As an eternal optimist, my motto is, "Today is going to be a GREAT DAY!" I thrive on challenges and solving problems. There is never a dull moment at Toppan!

Vision/plan for the future ▶ My plan for the future is to travel more. I learn so much from the different cultures, food, history and architecture. I would also like to go back to college part-time.



Werner van der Merwe

Quality / Risk Manager & DevOps Specialist
Development / Operations

► About the future of security solutions



Jean-Pierre Ting
Managing Director, Toppan Gravity

Industry trends

In the security document sector, it used to feel like threats were mostly virtual and not dangerous enough to provoke a crisis in a government or country. This has changed. Over the past few years, and particularly in recent months, worldwide tensions, physical and digital-world fraud, and distrust towards institutions are returning the government security industry to center stage. Complex threats mean governments increasingly rely on private expertise for a strategy covering all vulnerabilities. I believe worldwide government spending will prioritize security and identity in coming years.

Strengths and challenges for the Toppan Group

Toppan’s past is linked to formidable R&D on physical security. Its personalization system, world-class holograms, and unmatched product reliability are recognized globally. The brand is one of the industry’s strongest, but we are slow in adopting industry trends and in danger of irrel-

evance. A priority is making the brand synonymous again with innovation and quality.

Toppan’s creativity and R&D are legendary. Spending and patents possibly exceed those of competitors combined, but few new products and solutions actually reach the market. It’s vital to rethink how we launch new products or solutions and to expedite decision-making, commercialization, and market launch to match the pace of the industry.

Future vision

I don’t envisage a 100% digital future. We will need combinations of digital and physical security to fight elaborate attacks and fraud. Digital security alone will always be vulnerable. Physical documents, passports, and cards will remain and be increasingly sophisticated. Gravity is spending time and money to develop digital offerings, but it would be a mistake to not leverage our heritage and invest in new materials and physical security features. Governments will turn to reliable companies like Toppan because they need full turnkey solutions to deter all kinds of attacks.

Toppan should aim to be a global leader in terms of technology and solutions and also a trusted advisor in developing each country’s vision for security and safety.

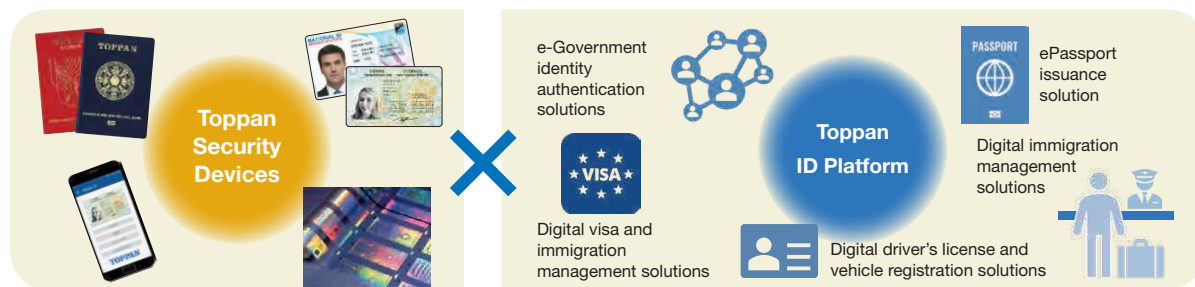
We must be at the cutting edge of physical and digital security technology, but also remain ethical beyond reproach, which is sometimes rare in our industry.

How do you recommend spending days off? ►

My only recommendation (for myself too) is to be able, as much as possible, to completely switch off, turn everything off... and then come back fully refreshed and ready to dedicate your energy and creativity to your mission.

Toppan’s head office is in Japan. What do you think of when you hear the word “Japan?” ►

I was pleasantly surprised by Japan’s positive image overseas. In the Middle East, CIS countries, Africa, and South America, Japan’s image is without controversy, synonymous with neutrality, social harmony, and honesty. The contrast with most major developed countries is stunning and something we can take advantage of.



Contributing to the creation of a social infrastructure that provides various services to society

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Security Solutions

<https://www.toppan.com/en/news/2022/05/newsrelease220516.html>

Temperature Logger Label for Long-Distance Transportation



Toppan will provide a dedicated app for data reading and a cloud-based management system (right).



Toppan has developed a thin, card-sized temperature logger label that enables temperature to be measured and recorded at regular intervals and data to be sent to a database via wireless networks. The label was used as a tool to measure and record the surface temperature of container boxes in a pilot test that involved transporting Japanese sake from major breweries in Japan to cold storage facilities in China, supporting quality preservation in international logistics.

Specifications of Toppan's temperature logger label

| | |
|---|--|
| Temperature measurement range | -35°C to +50°C (margin of error of $\pm 0.5^\circ\text{C}$) |
| Period over which measurements can be taken | Examples: In case of 10-minute interval: 33 days In case of 30-minute interval: 101 days |
| RFID communication protocols | NFC: 13.56MHz ISO/IEC 14443 Type A NFC Type-2 protocol UHF: 840-960MHz ISO/IEC 18000-6 EPC Global C1G2 V120 |
| External dimensions (horizontal x vertical x thickness) | 85.5 mm x 54 mm x approx. 1 mm |
| Battery life | At least six months when used continuously (depends on usage conditions) |

Features of the label

Simple structure and functions allow for a price that is less than one tenth of existing products

Measurement interval between one second and 60 minutes and timer function for start of measurement

• Information recorded more than 38,000 times when measuring "temperature range"
• Dedicated app for data reading and cloud-based system for managing temperature records

6/16

Electronics

<https://toppan.com/en/news/2022/06/newsrelease220616.html>

Next-Generation Time-of-Flight Sensor Is World's First Capable of Measuring Distances up to 30 Meters



Toppan and Brookman Technology have collaborated on employing a hybrid Time-of-Flight (ToF) method to develop a three-dimensional range image sensor capable of measuring distances from one to 30 meters.

As the world's first CMOS-process-based Time-of-Flight sensor with a maximum outdoor measurement range of 20 meters, more than five times that of existing products, it will drive practical use of image sensors and cameras for autonomous drones and other industrial applications.

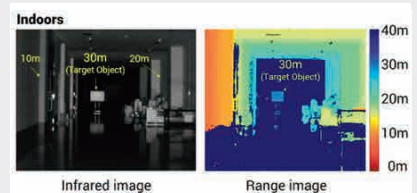
Features

Measurement of distances up to 30 meters

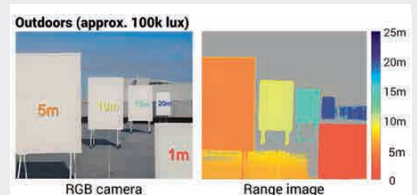
Noise cancelling function to facilitate outdoor measurement in mid-summer conditions

High-speed imaging of 120 frames per second

Simultaneous operation of up to 256 cameras



Example of results of indoor distance measurement using the new hybrid ToF sensor. Distances from one meter to 30 meters within the same field of view are represented by different colors.



Example of results of outdoor distance measurement by new ToF sensor. Distances from one meter to 20 meters within the same field of view are represented by different colors.

Toppan President Visits the Gutenberg Museum



Toppan President Hideharu Maro (third from left) and Managing Executive Officer Masa Tatewaki (second from left) in front of the Gutenberg Museum with its Director, Dr. Ulf Sölter (third from right)

Toppan President Hideharu Maro visited the Gutenberg Museum (Mainz, Germany) to see the origins of Toppan’s diversified business. The Gutenberg Museum is one of the oldest museums of printing in the world. It is named after

Johannes Gutenberg, the inventor of printing using movable metal type in Western Europe. The museum’s collection includes printing equipment and examples of printed materials from numerous cultures.



The Printing Museum, Tokyo, operated by Toppan, and the Gutenberg Museum are engaged in activities to preserve and pass on the pioneering letterpress printing technology that Johannes Gutenberg gave to the world and that remains one of the greatest treasures of humankind.

Interprint’s Video Content “IP VIBES”



Interprint Event



The recording of “IP VIBES”

The 6th Milano Salone International Furniture Fair¹ was held in Milan, Italy, from June 7 to 12. The fair featured exhibits from more than 1,500 companies and 600 Salone Satellina designers and drew more than 260,000 visitors. In conjunction with the fair, Interprint

exchanged ideas with industry professionals, interviewed renowned designers, and recorded the video content “IP VIBES.” “IP VIBES” will be available through Interprint’s official account on LinkedIn.

Check out Interprint’s LinkedIn account: <https://www.linkedin.com/company/interprint-group/posts/?feedview=all>

¹: Salone Internazionale del Mobile: The world’s largest furniture fair, held every April in Milan, Italy.

Toppan Group's Majend Makcs Holds Unveiling Ceremony for New Corporate Flag



About Majend Makcs Co., Ltd.

Business: Manufacture and sale of processed films and film products focused on packaging materials (food, FMCG, medical, etc.)
 Main locations:
 Headquarters: Ayutthaya, Thailand
 Manufacturing: Amata City Rayong Industrial Estate, Rayong, Thailand
 Employees: 259



Toppan and Majend Makcs, which joined the Toppan Group in May this year, held a ceremony to unveil the new Majend Makcs corporate flag at its Amata City Rayong Plant in Rayong Province, Thailand, on June 6. The ceremony was

attended by newly appointed Majend Makcs CEO Shinichi Kukita, COO Nobuyuki Takahashi, Plant Manager Sorawut Han-Asa, and 50 employees. In his speech at the ceremony, CEO Shinichi Kukita told employees, "Let's

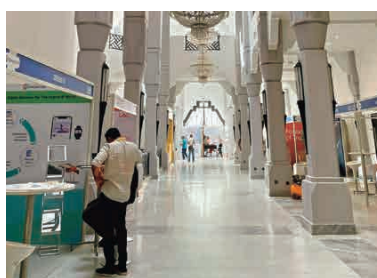
aim to become the best company in Thailand and in Asia by combining the trust and excellent employees that Majend Makcs has cultivated in Thailand with Toppan's technologies."

ID4Africa2022 Augmented General Meeting



Toppan, Toppan Gravity and Toppan FaceTech participated in ID4Africa2022¹ held at Mövenpick Hotel Mansour Eddahbi Marrakech (Marrakesh, Morocco) for two days from June 15. They exchanged opinions on ID business in Africa with the participants from all over the world.

1: ID4Africa is a non-governmental organization (NGO) established in 2014. They are working with African countries to build an Identity eco-system as a humanitarian and development aid. The movement promotes not only legal human rights (in line with SDG 16.9), but also the identity of all people as a practical necessity and inclusive support.



TOPPAN World SEEDS

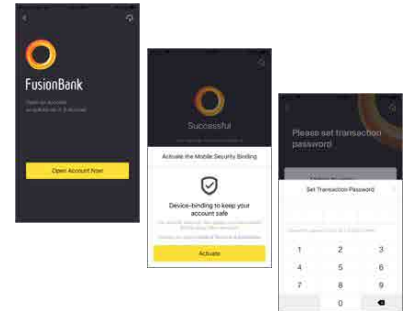
In this section, we introduce you to employees working at Toppan Group companies around the world.

File 2: Hong Kong

Total area: 1,110 km²
Population: 7.5 million (2020)



Hong Kong is a Special Administrative Region of the People's Republic of China. Located in South China, it consists of Hong Kong Island, the Kowloon Peninsula, the New Territories, and more than 260 other islands. The geography is mountainous, covering approximately 60% of the city. Tai Mo Shan is the highest peak, with an elevation of 958 m. The remaining land area is country parks and nature reserves.



Toppan iDGate

Toppan iDGate is striving to offer highly secure but also highly convenient authentication solutions. In particular, Fusion Bank is one example of a customer success story. They have adopted our iDenKey device binding solution, which is helping them to change the traditional complicated password to a simple 6-digit PIN while still complying with Hong Kong Government requirements.

Toppan iDGate (Hong Kong) Limited
North Point, Hong Kong
Business: Security solutions

Report

As a sales VP, I am responsible for promoting iDGate's authentication solutions to the international market. This includes face recognition and multi-factor authentication solutions. Our solutions are widely adopted by financial institutions, and we help them to ensure secure end-customer login.

My favorite restaurant is Le 188° Restaurant & Lounge, which is at the top of the Harbour Grand Hotel and very close to our Hong Kong office. It is a very nice place and provides a different angle from which to see the beautiful Victoria Harbor. I recommend going in the evening to see the excellent sunset scenery.

Eric Chow
Sales VP

Toppan iDGate (Hong Kong) Limited



MEET OUR PEOPLE

Live Each Day to the Fullest but Keep Life Simple

09
KYUNGMIN
KIM



Position/job
Customer Service Representative

Department & company name
Sales
Toppan Electronics Korea Inc.

Location (city and country)
Pangyo, Korea

KyungMin Kim joined Toppan in Korea in 2010. When she joined, Toppan had a small office with an area of 43 m² and four employees. Now, however, it has become a larger office of 164 m² with 12 employees. KyungMin Kim has had the opportunity to witness the development of the company.

Tell us a bit about how you came to work for Toppan?

Building on my career at the first company I worked for, I was looking for a company that had a strong, established organization, a good working environment, and the ability to bring value to the industry of the future. In 2010, seeing the paradigm shift in the display industry at the time, I became interested in its prospects and development potential.

What experience have you built up since joining Toppan?

Toppan Electronics Korea Inc. (TEKI) works on matters related to corporate establishment and business transfer. I have acquired legal knowledge and experience related to administrative systems. I believe that I have gained insight into work by

understanding the order in which things are done. In addition, when starting a new project, I learned that we need to research and communicate with each customer in a way that is appropriate for them. I have been able to accumulate professional knowledge on trade, accounting, and taxation through this experience.

How do you maintain a good work-life balance?

I always try to identify my abilities, to plan hobbies, and finally to develop hobbies into skills. To do this, I subdivided my hobbies and set goals accordingly. My main hobbies are pottery, woodwork, jewelry

making, and knitting. I define the purpose and how to achieve it. Without a plan, I cannot improve my skills. With such a plan, the process is enjoyable and the result is satisfying. My other hobby is watching the K League and Premier League. I know almost every club and all the players, competitive teams, history, results, and transfer histories. My range of hobbies has expanded to enable me to enjoy a richer life.

What advice or message do you have for Toppan colleagues around the world?

I hope that everyone can constantly explore their abilities and interests to create a plan that suits them. Rather than making detailed plans on a yearly or quarterly basis, I hope that I will be able to become a person who can be aware of the everyday joys of life by planning day to day.



It's fun to make beautiful jewelry



Supporting the Suwon Samsung Bluewings



Honing woodwork techniques



Working on pottery skills