



## Integrated Factory Automation



We exhibited our solutions at IGAS2022 (International Graphic Art Show) held at Tokyo Big Sight during 24th to 28th of November, 2022. We'd like to show our appreciation to all of you who have visited our Horizon booth.

Under our concept "Integrated Factory Automation", we successfully proposed our smart factory solutions in our largest booth ever, showing the latest technology such as workflow systems by 7 different companies, printer in-line solutions integrated by iCE LiNK, and the automatic sheet delivering demonstrations by AGV from the booth of printer companies.



At the East Hall 6, we also held the Smart Factory IGAS2022 collaborating with 11 other industry-leading companies to raise our common ideas for achieving the smart factory. We had 23 seminars and panel discussions about smart factory in printing industry (only in Japanese).

# SMART FACTORY ZONE



The SMART FACTORY ZONE gave a great impact to visitors at IGAS2018. It has come back with upgraded contents this year at East Hall 6. The wall decoration with 12 hexagonal panels with company names on expresses the Horizon's booth concept "Integrated Factory Automation".

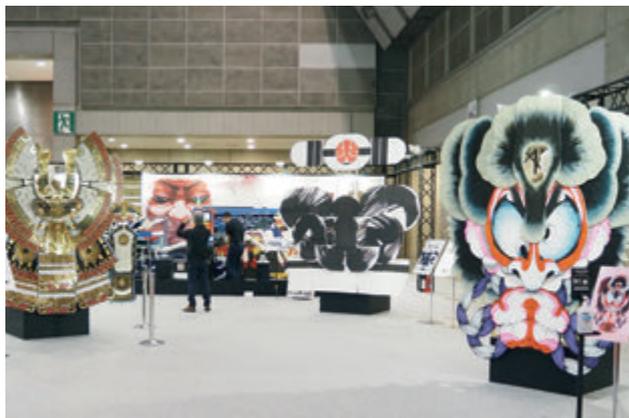
Total 26 seminars including the case studies shown by the companies who has been navigating a great success in this rapidly changing industry, discussion about future vision, introducing their latest technology, and collaborating presentations have been conducted in 5 days.



Videos

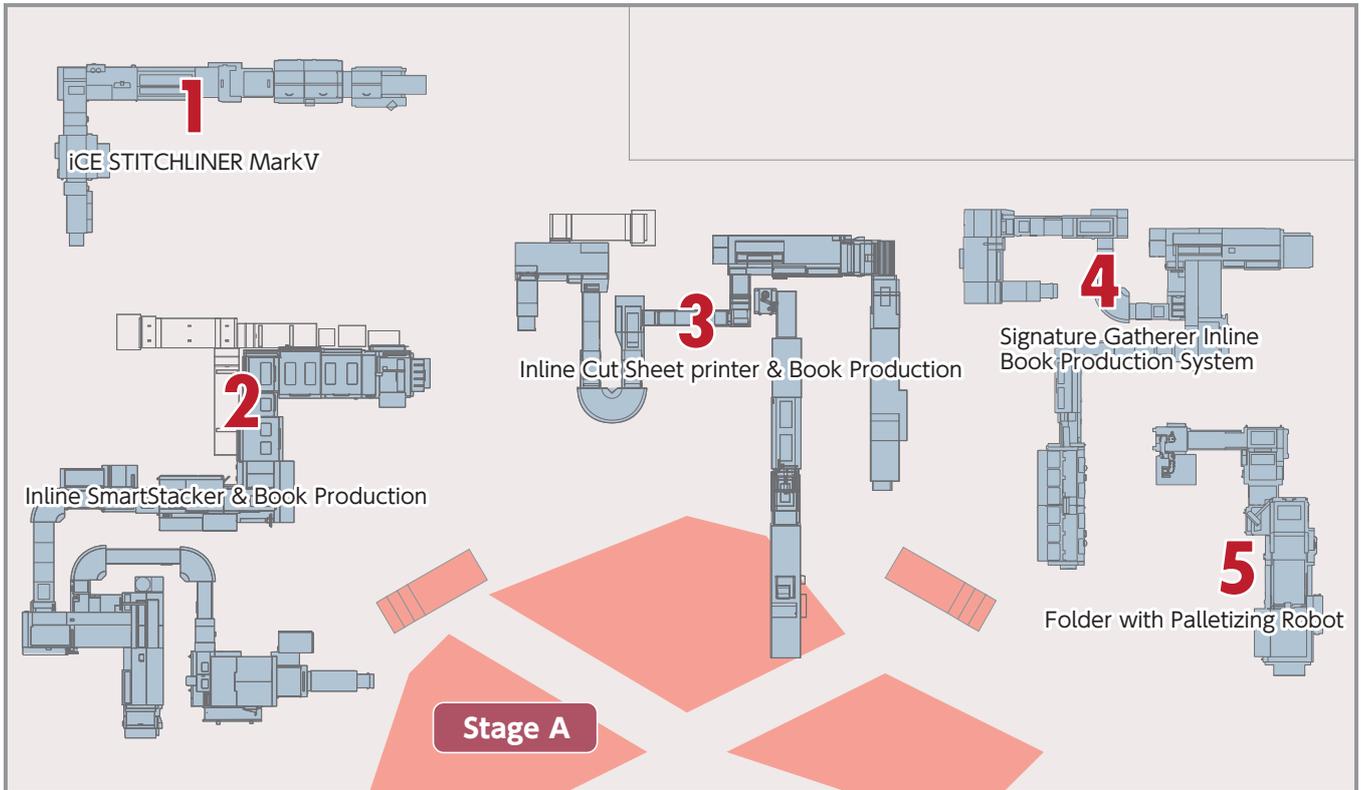


# ART×TECH ZONE



We also exhibited the ART x TECH ZONE outside the SMART FACTORY ZONE booth. The concept was the combination (harmony) of Art and latest technology of printing. 4 paper art costumes were made by the collaboration with the 4 different printer companies and Japanese designer brand "fair enough", taking advantage of each press's feature. We also exhibited the iCE BINDER BQ-500 and iCE TRIMMER HT-300 with the unique machine wrapping. This anime-looking design was created by a student of Kyoto University of the Arts by rearranging the scene from one of the most famous Japanese traditional art UKIYO. This system was shown as the automated solution by utilizing the robot arm and AGV. This idea of combining the traditional art and latest technology was admired by many visitors.





The iCE STITCHLINER Mark V is our roll-to-booklet saddlestitcher that achieves high productivity with a maximum production speed of 6,000 booklets per hour. Sheets are individually scored and plow-folded before stitching for sharp spines and tight folds.



This is our inline book production solution that processes B2 printed sheet into perfect bound books. An AGV brings pallets loaded with B2 printed sheets to our SmartStacker infeed section for automated loading. The SmartStacker is equipped with inspection devices by DAC ENGINEERING for high-level quality control.



This solution enables variable book production with no operator makereadies. Two presses (one for book blocks and one for cover sheets) are connected inline, with the cover sheets being printed based on book-block contents and then automatically fed into a binder. Book blocks are processed with our SmartSlitter and then fed into the binder with a robotic arm.



This solution is designed to produce books from offset-printed signatures and features our gatherer, book block feeder, 4-clamp perfect binder and three-side trimmer all connected inline. Palletized signatures will be transported by an AGV from the Folder with Palletizing Robot System.



This B1-to-signature production system eliminates all manual labor involved with transportation, loading, and palletizing by utilizing an AGV and robotic arm.

# STAGE A

We introduced 5 different demonstrations collaborating with printer companies at stage A presentation. The highlight was the automated sheet delivering between neighboring booths of printer companies and the Horizon booth utilizing the AGVs. These sheet delivering solutions between different booths were successfully shown for the first time at IGAS exhibition.



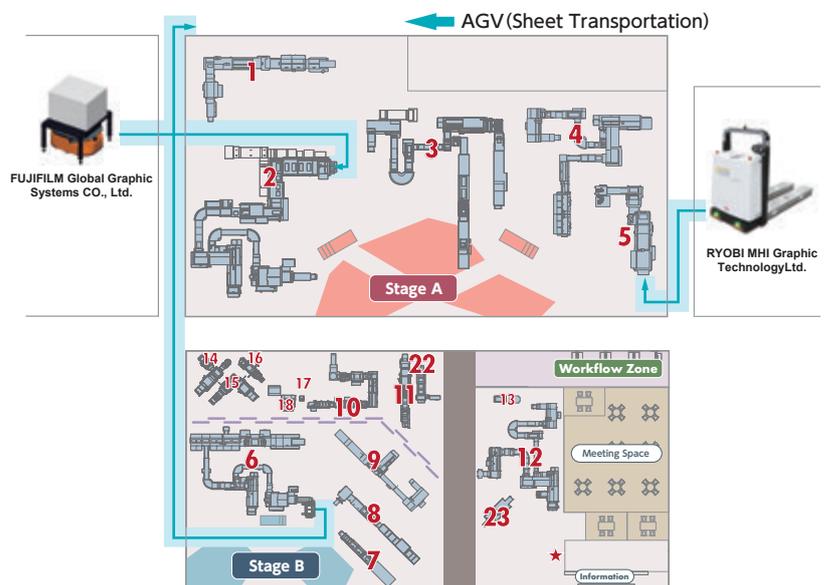
The sheets were printed by Revoria Press B2 (tentative name) at the FUJIFILM Global Graphic Systems CO., Ltd and delivered to the feed section of SmartStacker by AGV.



The sheets (A4 duplex 16-page) were printed by RMGT 970PF-8 at the RYOBHI MHI Graphic Technology Ltd. and delivered to the feeder of Folder with Palletizing Robot system by Nipper (AGV).

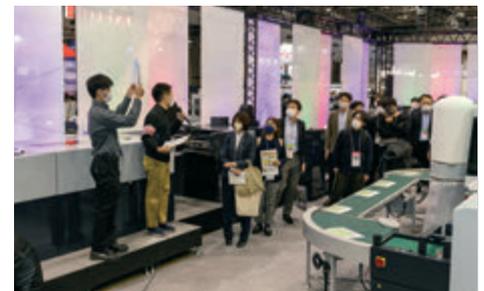


## Demonstration with AGV (Automatic Guided Vehicle)

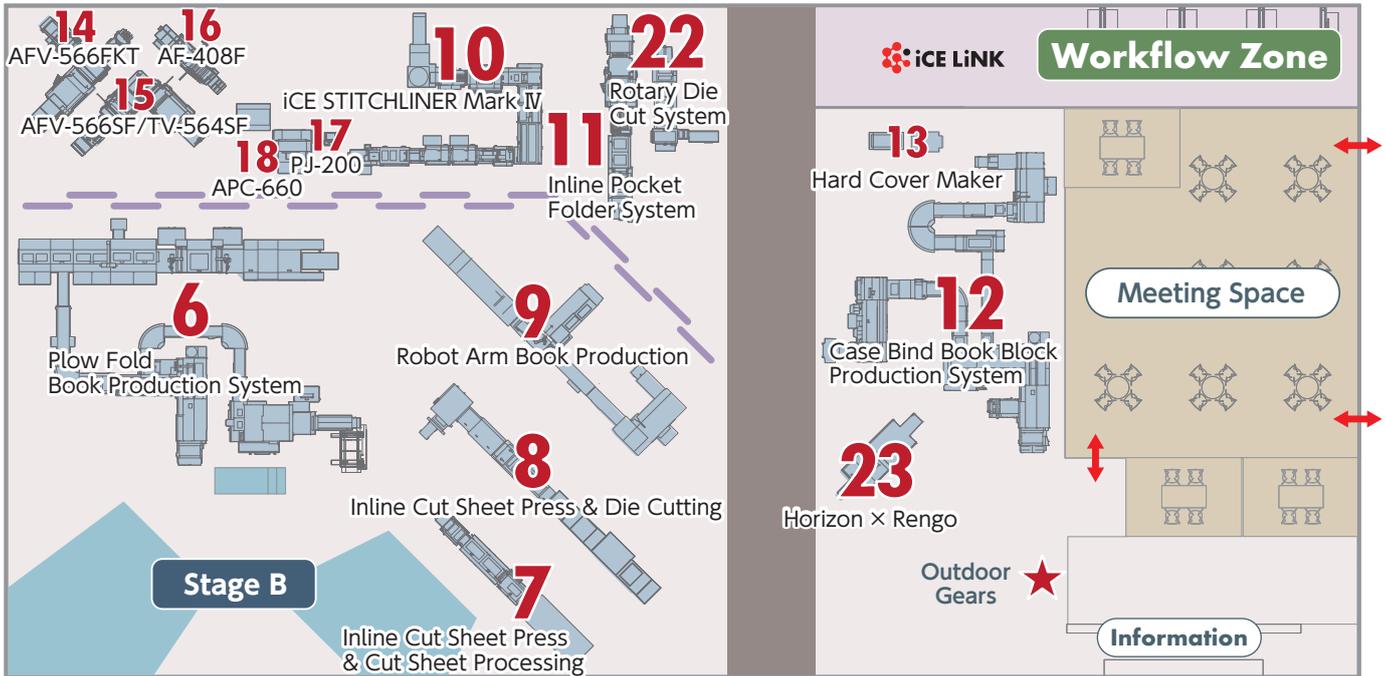


# STAGE B

We introduced 6 different demonstrations at stage B. Our newly developed BBS-56 book block maker was shown for the first time collaborating with the neighboring Miyakoshi booth. We also exhibited the inline production systems collaborating with 3 different printer companies as automated solutions for digital press and post-press.



By collaborating with Miyakoshi, 2 different books (B5 and A4 sizes with different thicknesses) were produced at production speed of 800 books per hour.



Plow Fold Book Production System



This roll-to-book solution allows for book-of-one production at a high production speed of up to 800 books per hour. A plow-fold book block system is integrated inline with our book block feeder, perfect binder, and variable trimmer to allow for roll-to-book production in one pass.



Inline Cut Sheet Press & Cut Sheet Processing



Inline system with the CANON's imagePRESS C810 and our SmartSlitter. The connected CSD-40SMSL Card Stacker allows for the precise stacking with accurate count. To synchronize with the speed of digital press and SmartSlitter, the SBM-100 universal buffering module is connected.

Inline Cut Sheet Press & Die Cutting



This system connected with the Konica Minolta's AccurioPress C14000 allows for business card production in one pass. The cut alignment and print quality is inspected by DAC Engineering's Preinity scanners. The robot-hand banding section (under development) is equipped for further automation of business card production.

Robot Arm Book Production



This print-to-book production solution features inline robotic feeding to allow for continuous production. Book blocks are printed by the Riso's VALEZUS T2200 digital press, fed into our single clamp perfect binder with a robotic arm, and then finished with our three-side trimmer.

Case Bind Book Block Production System



This inline solution allows for high-mix, low-volume case preparation from any type of book block by integrating our end sheet feeder, loose-sheet book block feeder, perfect binder, gauze applicator, and trimmer into one system. The RFID tags are planted in both hard and soft cover books in our demonstration for appealing the use of scanned data for address printing, progress checking, etc.



ICE STITCHLINER, Mark IV



The ICE STITCHLINER Mark IV is our sheet-to-booklet saddlestitcher that features further improved automation and binding quality. This user-friendly system provides increased efficiency and stable binding quality to meet various market needs.

Inline Pocket Folder System



This inline system features our rotary-die cutting, gluing unit, and buckle folder to make pocket folders with environmentally friendly materials.

Folders



At the folder zone, AF-408F fully automated 8-buckle folder, ICE FOLDER AFC-566SF suitable for digitally printed sheets, and ICE FOLDER AFC-566FKT with various functions includes fully automated changeover.

Rotary Die Cut System



The system is configured with FFU-N4055 sheet feeder, RD-N4055DM rotary die cutter, and SPC-N4055 separator connected with the stacker & delivery unit (under development). This stacker & delivery unit combines the several stacks into one before delivery for the smooth picking operation.

RENCUSHION PACK



This is the automated packaging system RENCUSHION PACK for all-paper, cushion envelope packaging that eliminates the need for adhesives and bubble wrap. The RFID tags are planted in both hard and soft cover books in our demonstration for appealing the use of scanned data for address printing, progress checking, etc.

Outdoor Gears



Div-Horizon exhibited our camp gear products which have been released on October 2021. R&D and manufacturing are all done at Horizon Biwako Factory as utilizing all of our processing facilities for Horizon products.

## Workflow Zone

In this exhibition, ICE LINK is connected with 12 ICE series machines and 3 printers. As the ICE LINK controls the setup information on each machine and job scheduling, current status of connected machines and printers is visualized on Dashboard screen which helps to improve the productivity.

