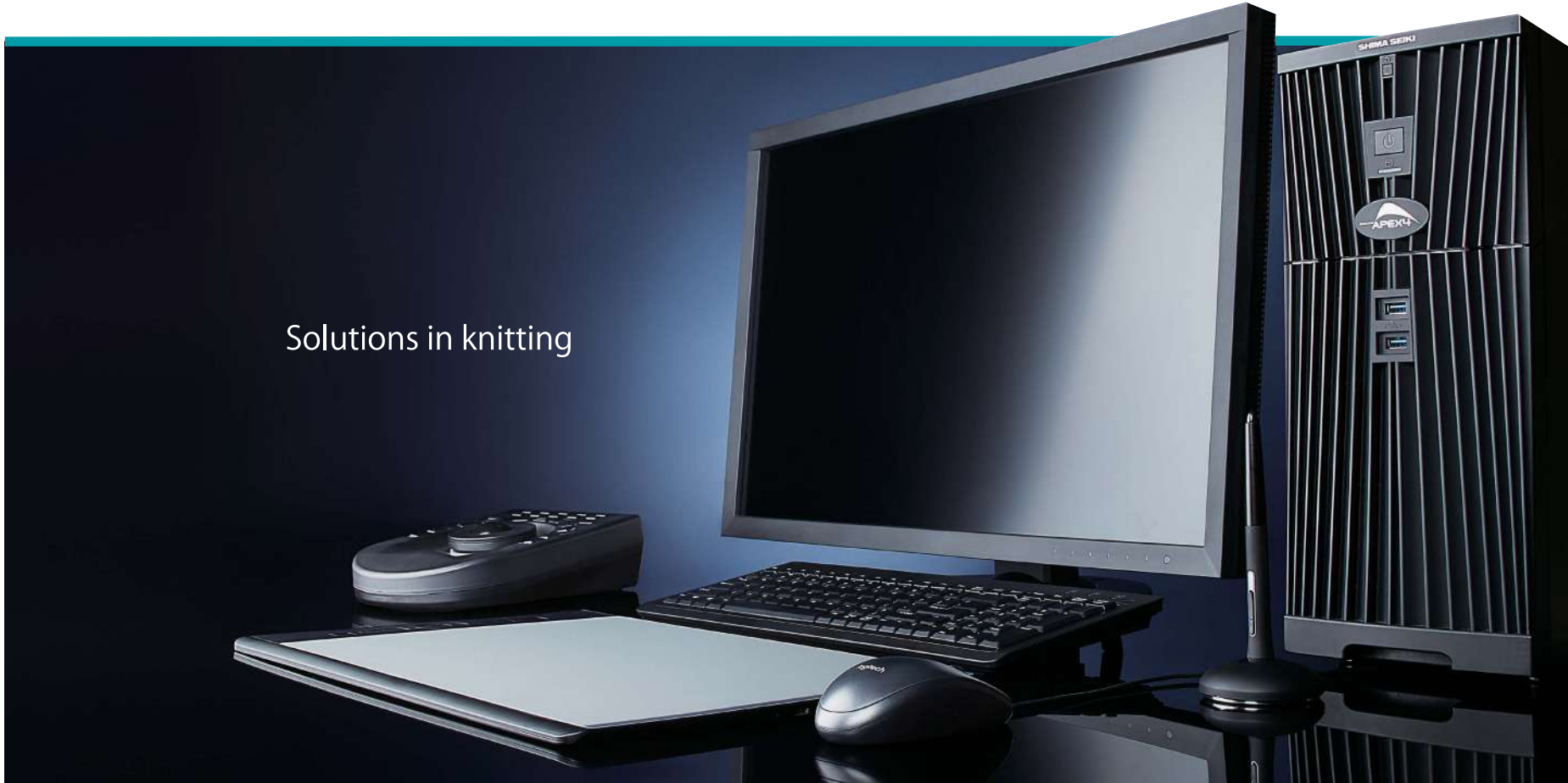# SDS-ONE APEX4

3D Design System

Solutions in knitting

your choice
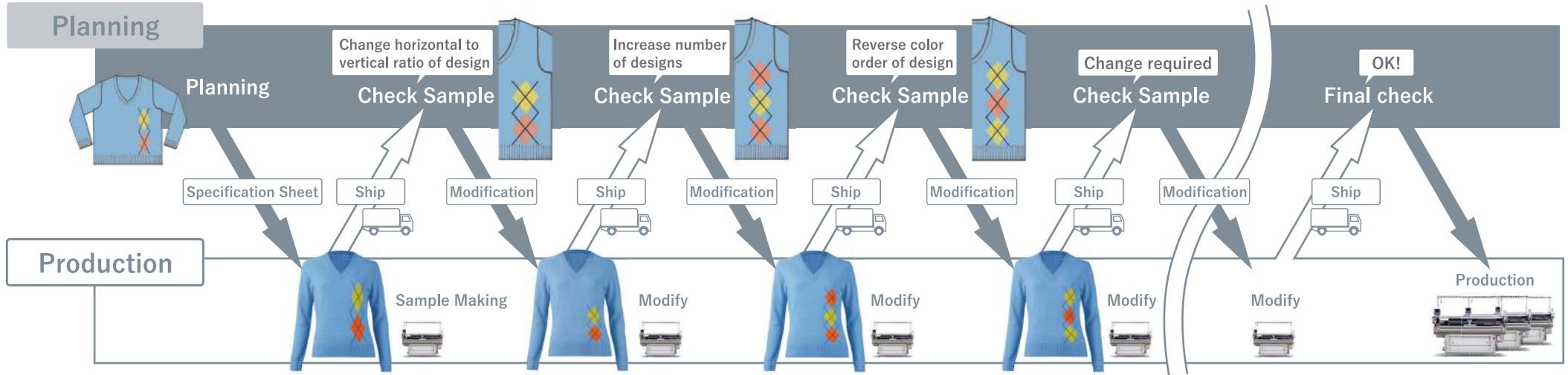**SHIMA SEIKI**

''Nothing else compares ''

Faster. More realistic. More creative.

From planning, design and prototyping to production and even sales promotion,

SHIMA SEIKI's SDS®-ONE APEX4 realizes digitalization at the highest quality and speed

for fashion apparel and various other items.

Before
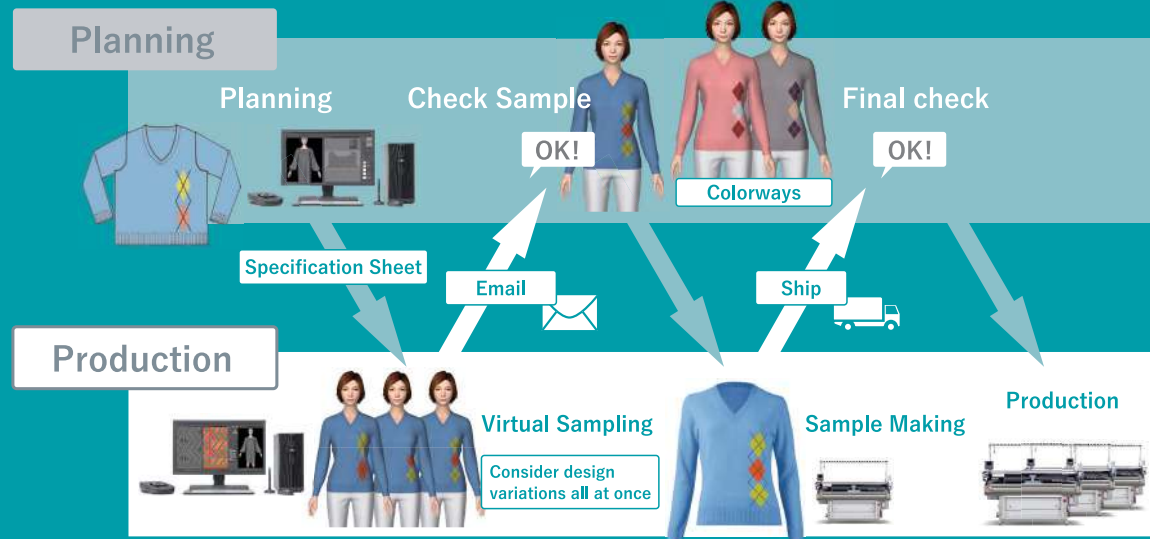## Conventional Workflow

SDS-ONE APEX4

Conventionally, a significant amount of time and cost is spent among product planning and production departments, for repeatedly checking and modifying such design elements as pattern, silhouette, color and texture.

Planning

Planning	Check Sample	Check Sample	Check Sample	Check Sample	Final check
	Change horizontal to vertical ratio of design	Increase number of designs	Reverse color order of design	Change required	OK!

Specification Sheet	Ship	Modification	Ship	Modification	Ship	Modification	Ship	Modification	Ship

Production

Sample Making	Modify	Modify	Modify	Modify	Production

Production Time → 1 Day~2 Weeks → 1~2 Months

After
Workflow Using Virtual Sample

Planning

Planning	Check Sample	Final check
	OK!	OK!
	Colorways	

Specification Sheet · Email · Ship

Production

Virtual Sampling — Consider design variations all at once · Sample Making · Production

Smart · **Speedy** · **Sustainable**

Taking advantage of virtual samples and digitalization of communication dramatically reduces product development lead times. Product planning can be performed closer to the beginning of the season, improving accuracy in predicting trends and product demand. In doing so, bargain sales and lost sales opportunities can be reduced while maximizing profits. Furthermore, sustainability is achieved by reducing the total volume of unsold products that go to waste.
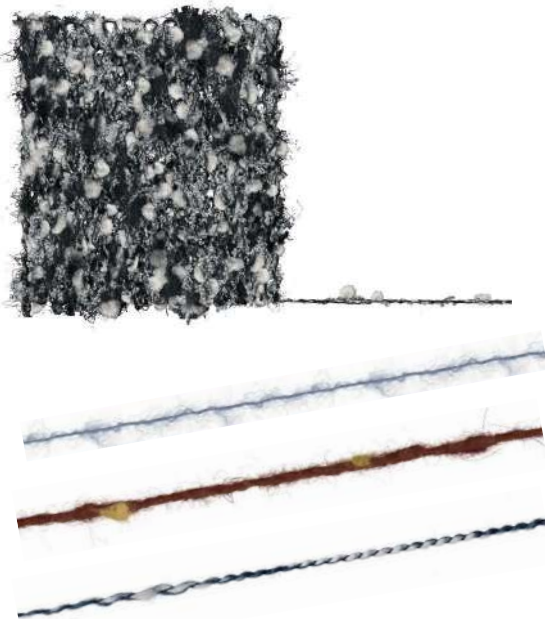
TOTAL FASHION SYSTEM

Making Ideas Real
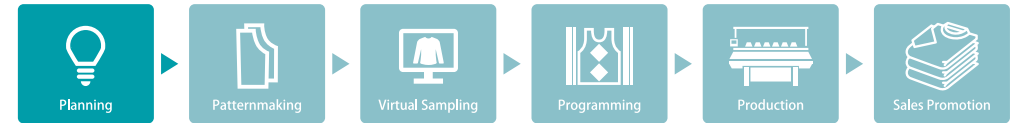
Yarn

Yarns can be scanned-in to extract the yarn image to be used in realistic loop simulations. Brand new yarns can be developed as well, including twisted yarns, mélange yarns, space-dyed yarns and slub yarns.

Yarn companies can design their own original yarns from scratch, and present a digital yarn collection to knit manufacturers and apparel companies. SHIMA SEIKI provides solutions for smooth production throughout the knit supply chain.
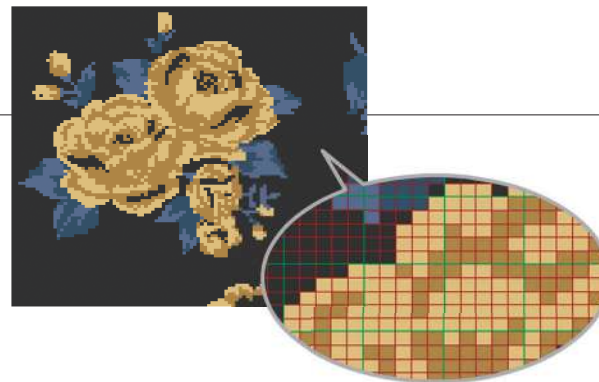
Designing

A rich collection of design tools is available for effective support of design work for intarsia, jacquard.
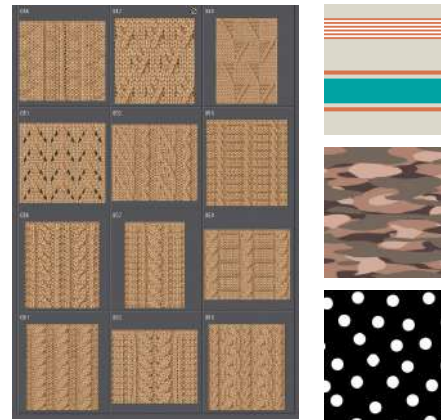
▌ Convert to Stitch

Illustrations and photographs can be converted into stitches according to gauge. Taking into account the vertical to horizontal ratio of knitted loops, accurate evaluation can be made of the final product size.
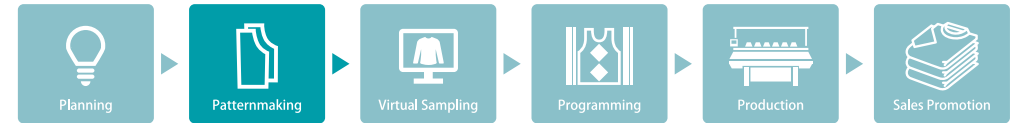

Colorway

Only a single sample is needed to develop a full range of high-quality colorway simulations that maintain the original sense of texture and material.
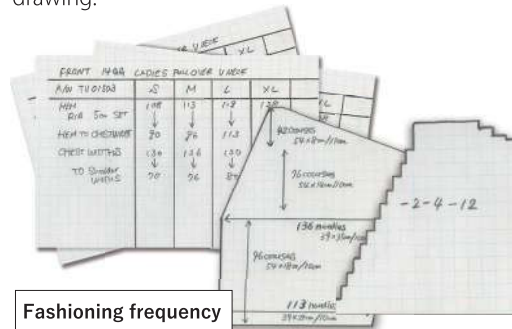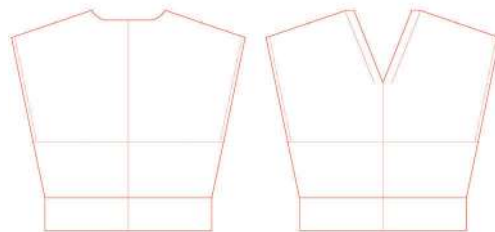
Developing New Possibilities

Patternmaking

SDS®-ONE APEX4 uses "patterns" as the basis for shaping a garment. You can create your ideal silhouette without requiring specialized knowledge or experience in fashioning frequency and manual drawing.

Fashioning frequency

Patternmaking

Fitting Simulation and Silhouette Evaluation

Patterns are used to perform simulated fitting, allowing evaluation of fitting in 3D. Fabric tension and pressure points can be shown as reference for product comfort and fit.
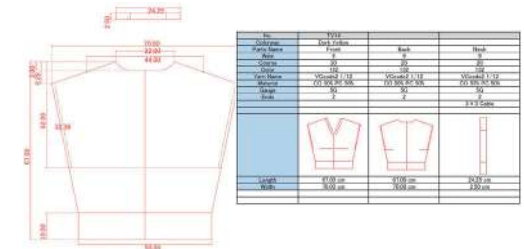
Grading and Instruction Form Output

Correct sizing by use of grading software yields an optimum silhouette for each product size.

Measurements and information for each part can be arranged and output for use in instruction forms.

▌Supporting Alvanon Virtual AlvaForm

Alvanon's Virtual AlvaForm 3D avatars are supported for improved fit that reflects modern-day consumers.
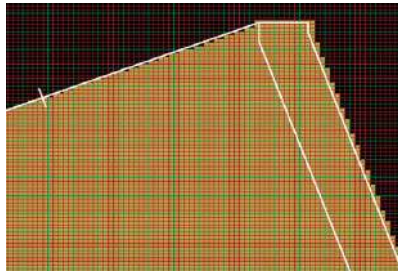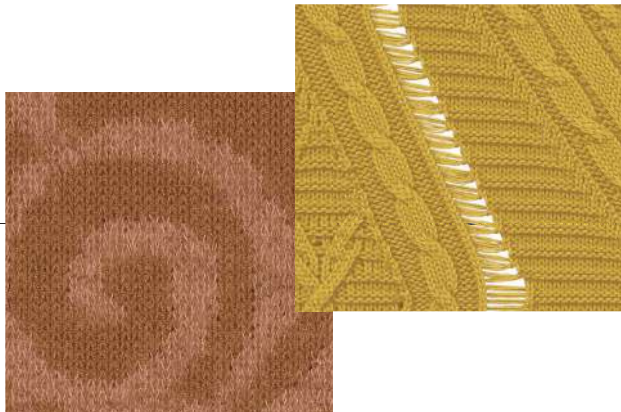
No Need for Samples Anymore

Converting to knit data

The pattern is converted to number of stitches by entering density information of stitches.

Knit Simulation

By using actual yarn data, it is possible to perform realistic simulations that can be mistaken for the actual product.
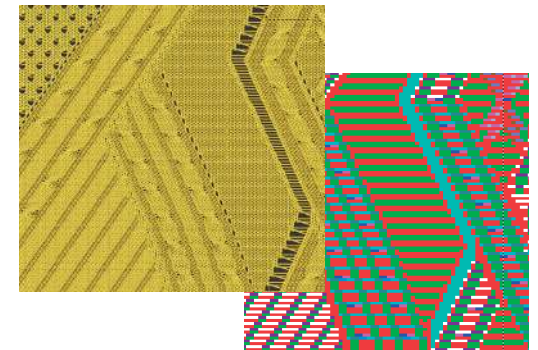

3D Virtual Sampling

Only SHIMA SEIKI's design system can perform ultra-high-precision 3D simulation of fabrics including dimensional structures and fuzzy textures.

Connected to Production

Virtual sample data is linked directly to production data, enabling smooth communication between planning and production.

Creating 2.5D product image

Simulations can be composited onto photos.
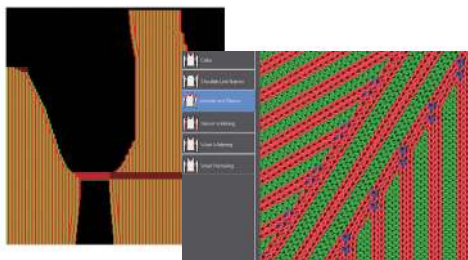

About virtual sampling

Evolution Never Stops

Functions That Support Programming

Visual Shaping

The user-friendly menu uses diagrams for easy recognition of knitting methods.

Automatic Yarn Carrier Setting

Automatic Yarn Carrier Setting software automatically allocates yarn feeders, allowing easy programming of complex intarsia patterns.


Customized style

Packages are automatically generated for knitting methods such as slits, flechage and darts that are used below the connecting points of the sleeve and body.
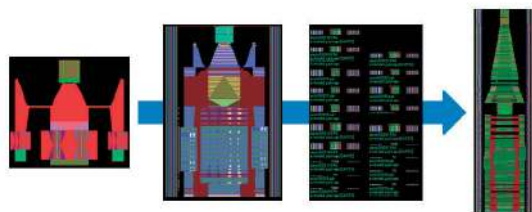
## For further efficiency

Creating Knitting Data

Patterns are created automatically based on measurements. The patterns are furthermore converted into the correct number of stitches for increased efficiency.
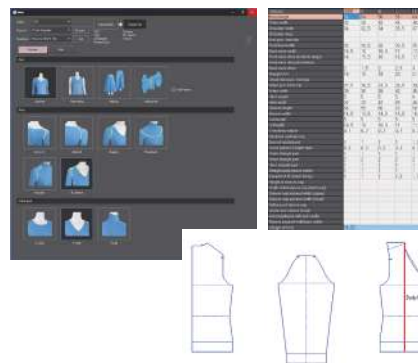
Pattern and design data created in the planning stage can be used as a basis for programming as well.

Divided display

A single image can be shown divided into 2 screens that can be operated on independently. Individual zoom ratios, display positions, and linkage to packages enable more efficient work.
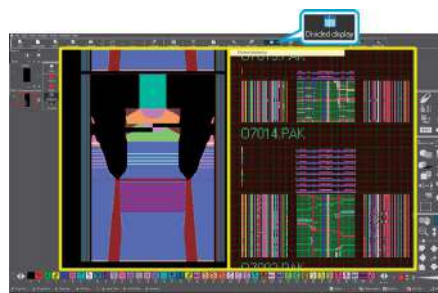
Before Knitting

Knitting Assist

Unfavorable knitting conditions and programming errors are detected beforehand, reducing time spent in troubleshooting.
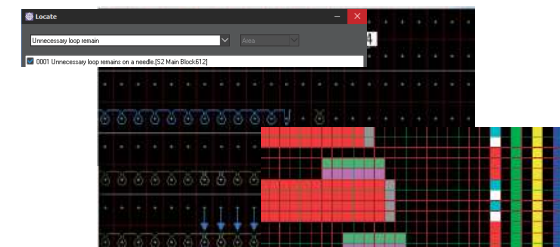
Knitting Viewer

3D animation allows knitting conditions such as yarn and needle movement to be checked beforehand.

Loop Simulation

Knitting data is used to perform loop simulation, which is used to check the program prior to knitting.

5

Only Possible Because
It's SHIMA SEIKI

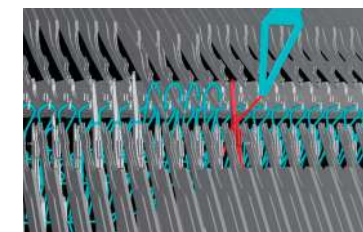Planning ▶ Patternmaking ▶ Virtual Sampling ▶ Programming ▶ Production ▶ Sales Promotion

Fabric design simulation

Weaving

Printing

Embroidery

3D fitting simulation

Grading

3D virtual sampling

Knitting Viewer

3D knit simulation

Inkjet Printing Machine

Virtual Sample

Patternmaking

Patternmaking

knit simulation

Programming

Fabric Cutting Machine

Production

Computerized Knitting Machine

Digital yarn

Colorway evaluation

Yarn & Textile

Design

Sales Promotion

e-Commerce
Customization

Planning

SHIMA Datamall™
Digital Content Web Service

Design System

SHIMA KnitManager™

6

Expanding Opportunities

Pre-sales Activities

By using realistic virtual samples created on SDS®-ONE APEX4, it is possible to forecast demand by taking orders as well as performing surveys in stores and on websites before producing actual products.
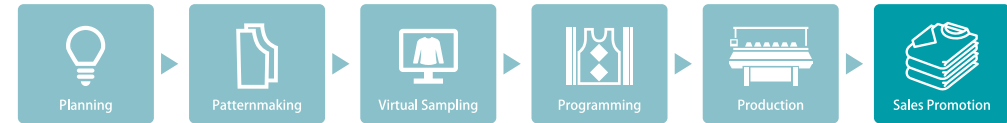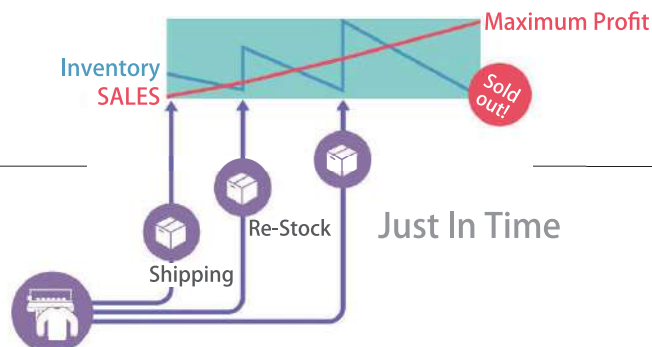
Realizing optimized inventory

Production volume can be adjusted based on demand forecast. By replenishing inventory with on-demand WHOLEGARMENT® production, inventory can be optimized through Just-in-Time inventory.

Maximum Profit

Inventory
SALES

Sold out!

Re-Stock   Just In Time

Shipping

Applications in e-Commerce

When posting product images to the web, time is usually spent waiting for the final product before photographing and retouching it. With virtual samples created on SDS®-ONE APEX4, realistic images can be introduced to market instantly, reducing time and cost involved in sample making, photoshooting, and photo retouching.
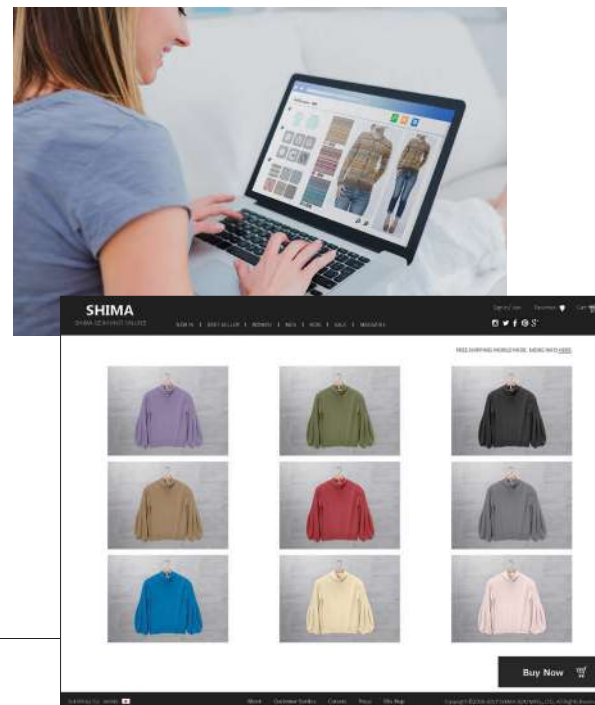
Customization

By combining WHOLEGARMENT® knitting with the latest automatic programming technology, an innovative made-to-order production process can be realized. The product image can of course be confirmed via virtual sampling in advance for promoting customer satisfaction.

Measurement

Other Industries

Weaving

Simulations can be performed for check, dobby, multiple weave and jacquard patterns.

Circular Knitting

Simulations can be performed for stripes, structures and jacquards for both single- and double-knit circular knitting machines.

Printing

Designs can be produced and repeated, and colorways can be evaluated through simulations.

Embroidery

Embroidery simulation is performed easily by punching function, which converts illustrations into stitches automatically.

Pile Weaving

High- and low-piles as well as shirring effect can be set for realistic simulations.

Product Images

Full User Support

User-Friendly Interface

SDS®-ONE APEX4 is equipped with a pen tablet and special trackball unit, so you can work efficiently using both hands.

Work Menu / Assistant Menu

Easy-to-understand guidelines with photos and illustrations, customizable workflow sequences and detailed help menu allow beginners and professionals alike to take full advantage of SDS®-ONE APEX4.
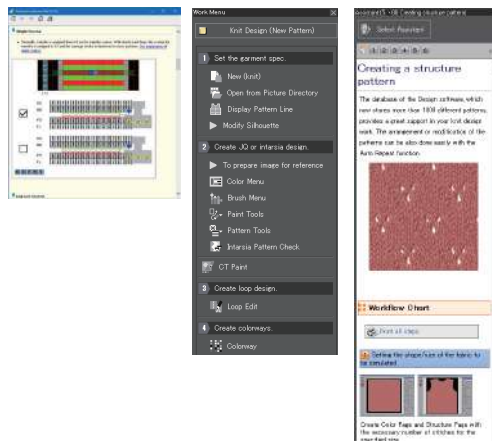
Color Management System(CMS)

Color-matching among scanner, display monitor, printer and other input/output devices is possible. From display to print output, color management is possible based on Adobe RGB and sRGB.
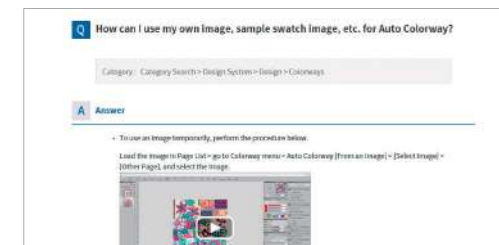

SHIMA online

▌FAQ Site

Frequently asked questions about SHIMA SEIKI products are answered. A search function is available for searching topics using key words. Furthermore some questions are answered in an easy-to-understand manner through the use of videos.

▌SHIMA Datamall™

SHIMA Datamall™ is an online service that allows users to search, browse and purchase a variety of useful digital data for planning, production and sales of fashion items.


▌SHIMA KnitManager™

SHIMA KnitManager™ is a production management system designed for the flat knitting factory. Visual confirmation of various information such as machine operation status and production progress is available for maximizing productivity and eliminating waste. Online monitoring service allows progress report to be checked via web application.
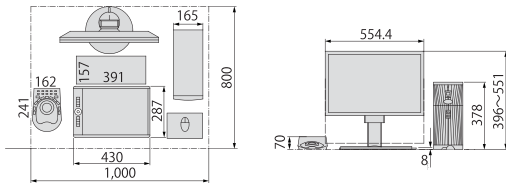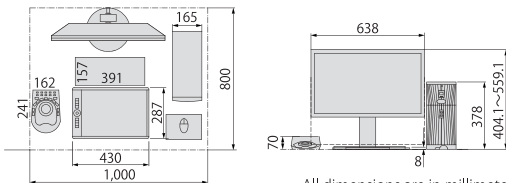
SDS-ONE APEX4 DIMENSIONS

BASIC SPEC
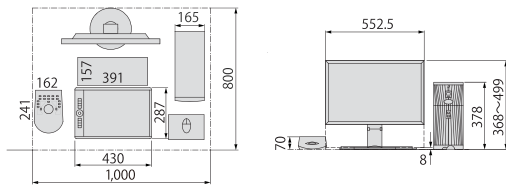
DESIGN SPEC

Hyper Simulation SPEC

All dimensions are in millimeters.

SPECIFICATIONS

MODEL		SDS-ONE APEX4 [BASIC SPEC]	SDS-ONE APEX4 [DESIGN SPEC]	SDS-ONE APEX4 [Hyper Simulation SPEC]
Software Package		Basic Spec *1	Full Spec	
Application Software	Design	◯ *2	◯	
	KnitPaint	◯	◯	
	3DModelist®	–	◯	
	Embroidery	–	◯	
	PGM *3	◯	◯	
Host	Operating System	Microsoft Windows 10 IoT Enterprise SAC 64bit		
	Processor	Intel Corei7-8700 3.2GHz Turbo 4.6GHz 6 Core with HyperThread		
	Main Memory (RAM)	8GB	32GB	
	Hard Disk	2TB		
	SSD	–	500GB	
	Interface	10/100/1000 BASE-T Ethernet × 2		
		USB2.0 × 4 ports (Rear × 4 ports) USB3.1Gen1 × 4 ports (Front × 2 ports, Rear × 2 ports) USB3.1Gen2 × 2 ports (Rear × 2 ports)		
	Serial Interface	2 ports		
	Video Card	On-board graphics	Standard graphics	Hyper graphics
	Accelerator	◯		
Operation	User Interface	Menu-interactive		
	Tablet	Large size (430mm × 287mm USB) ＋ cordless pressure-sensitive pen		
	Subkeyboard	3D Subkeyboard (Single trackball＋3D manipulator＋function buttons) (USB) or Single trackball with function buttons (USB) *4		
	Keyboard	Japanese or English keyboard (USB)		
	Mouse	Optical mouse with scroll wheel (USB)		
Display	Display Type *5	24-inch full-color LCD widescreen display (CMS unsupported)	24-inch full-color LCD widescreen display	27-inch full-color LCD widescreen display
	Resolution	1,920 × 1,200 pixels 60Hz	1,920 × 1,200 pixels 60Hz	2,560 × 1,440 pixels 60Hz
	Color	24-bit full-color (16,777,216 colors), sRGB supported	24-bit full-color (16,777,216 colors), Adobe RGB supported	
Miscellaneous	Main Unit Size	W165mm × D395mm × H378mm		
	Main Unit Weight	10.7kg (23.59 lbs.)	11.0kg (24.25 lbs.)	11.7kg (25.79 lbs.)
	Power	AC100-240V 8-4A 50/60Hz		
Options	i1 Color measuring device	–	◯	
	Monitor hood	–	◯	
	PANTONE FASHION, HOME + INTERIORS Color Guide	–	◯	

*1 : It is possible to select only PGM software with Basic Spec.
*2 : Some functions are unsupported.
*3 : PGM software includes paternmaking, grading and marking functions.
*4 : Selectable between 2 types of subkeyboards.
*5 : Submonitor (dual monitor) connection not supported.

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This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (http://www.openssl.org/)
This product includes cryptographic software written by Eric Young (eay@cryptsoft.com).
This product includes software written by Tim Hudson (tjh@cryptsoft.com).

your choice
SHIMA SEIKI

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TEL +81-73-474-8210 FAX +81-73-474-8270

www.shimaseiki.com

Website

Global Network

ISO9001 Certification : SHIMA SEIKI has ISO9001 certification for Design and Manufacturing of Apparel Design Systems.
ISO14001 Certification : SHIMA SEIKI Headquarters is certified as an ISO14001 accredited company.

⚠ **SAFETY NOTICE** In order to ensure safe operation of the equipment, please review all operation manuals carefully before use.