



THIS TREND COLLECTION EMBODIES WHAT IT MEANS TO CREATE WONDERFUL KNITS.

IN TODAY'S WORLD IT CAN OFTEN FEEL LIKE EVERY ASPECT OF ONE'S LIFE IS MONITORED, MEASURED AND EVALUATED, WHICH IS WHY WE NEED THE WONDERFUL IN OUR LIVES MORE THAN EVER BEFORE.

MOMENTS OF TRUE WONDER MAY FEEL RARE BUT THEY DON'T HAVE TO BE. WHEN THE RIGHT TECHNOLOGY COMPLIMENTS A CREATIVE VISION, WONDERFUL THINGS CAN HAPPEN WITH FREEDOM AND FLUIDITY.

SO WHETHER IT'S FOR OUR HOMES, OURSELVES, OUR CHILDREN OR SIMPLY OUR OWN WELLBEING, STOLL'S TECHNOLOGY IS HERE TO MAKE WONDERFUL KNIT IDEAS BECOME AREALITY.

WELCOME TO THE TERRA INCOGNITA PROVIDED BY STOLL. Cozy STOLL-weave-in<sup>®</sup> Intarsia jacket in Fully Fashion design with knitted-on pockets and belt. The combination of many Intarsia fields and yarn colours result in a unique colour effect. Additionally, a handcrafted look is achieved through the variety of inlaid yarns, such as a subtle slub yarn in combination with cotton tape yarn, both used for STOLL-weave-in<sup>®</sup> technique.

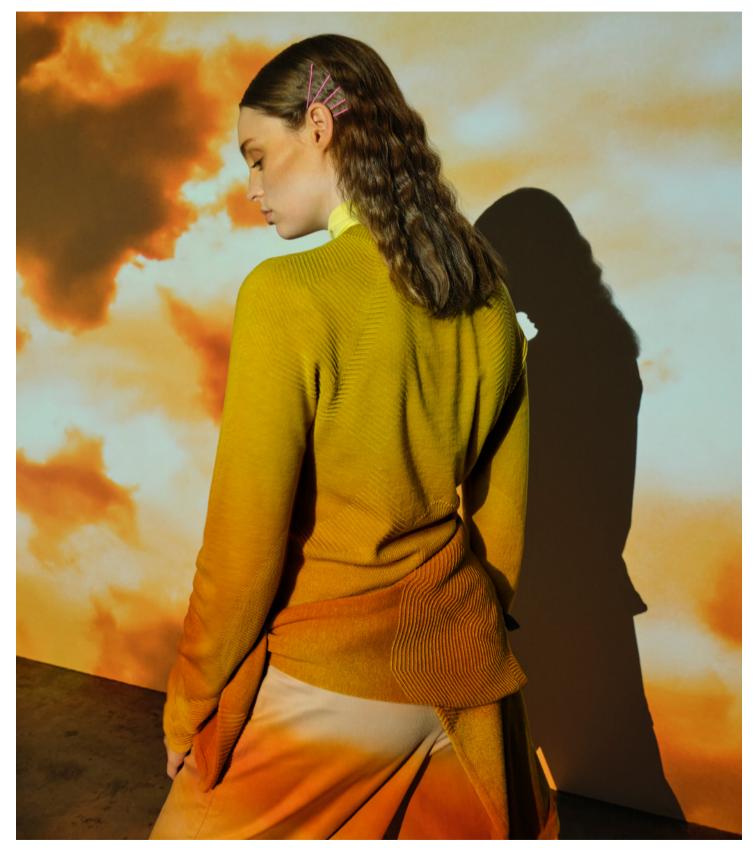




2110062 / STOLL-weave-in® Intarsia jacket ADF 530-32 ki BcW multi gauge / E 7.2 STOLL-weave-in®



Ultra lightweight STOLL-knit and wear<sup>®</sup> outdoor men's sweater in 14 gauge optics. The sustainable sweater is made from recycled lyocell plated with ultra fine wool to improve moisture transfer and comfort. Waste material amounts to less than 1%. A float structure on the front and the sides supports shaping. Integrated ventilation zones under the armpit and on the back enhance breathability.





2110065 / Outdoor men's sweater ADF 830-24 ki W knit and wear / E 10.2 STOLL-knit and wear®



2110066 / Casual men's sweater ADF 830-24 ki W knit and wear / E 7.2 STOLL-knit and wear® / STOLL-autocreate®

Customizable STOLL-knit and wear<sup>®</sup> men's sweater with Inverse plating. The mix of casual linen and viscose material results in an appealing matt/shiny contrast. The artwork for Inverse plating can be customized in a wave design on all body parts.

MARINA





Fully Fashion home dress with "Wonder"-artwork in the finest gauge cross tubular Jacquard. Impactful colour gradients are created with only six different yarn colours by combining a 2-colour cross tubular Jacquard with Intarsia and STOLL-ikat plating<sup>®</sup>. The 20 gauge results in print-like designs with very detailed resolutions.

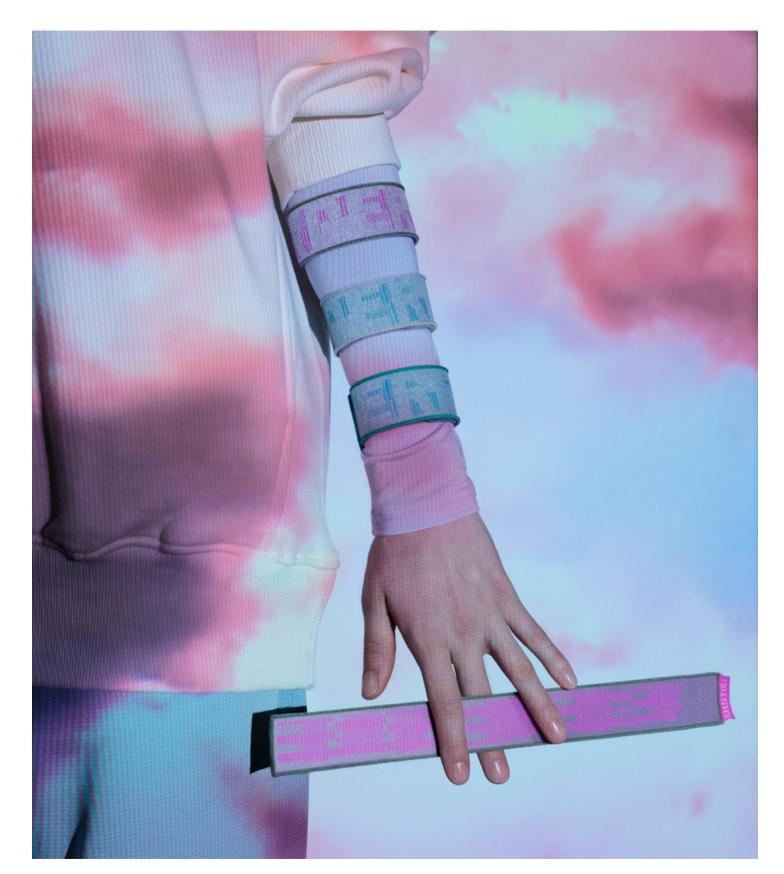


2110058 / Wonder dress ADF 830-24 ki BcW multi gauge / E 10.2 STOLL-ikat plating®

Fully Fashion Yoga tights in a fine gauge devoré design with body mapping areas. Subtle repeats in the op-art inspired rhomb artwork blend into each other creating a functional body mapping gradient for different moisture transfer zones. Due to different float lengths in texturized polyamide on the inside, the moisture can be better distributed to the outer material consisting of recycled lyocell while having a closed surface on the face side. Transparent single-ply Intarsia zones in the hollow of the knee offer full breathability.



2110005 / Devoré Yoga tights ADF 530-32 ki BW / E 18m.16 STOLL-devoré knit® Fully Fashion snap wrap cover in tubular design with reflective yarn for passive visibility function. The Inverse plating artwork can be chosen and sent directly to the machine by using STOLL-autocreate<sup>®</sup>. This enables each order to be produced individually and on-demand.





2110070/Snap wrap cover ADF 530-32 ki W/E 18m.16 STOLL-autocreate®



2110027/Reversible women's hoodie ADF 530-32 W/E 14 STOLL-weave-in®/STOLL-ikat plating® Fully Fashion reversible hoodie with STOLL-ikat plating<sup>®</sup> and Stoll-weave-in<sup>®</sup>. Choose the style that fits you best: either the shiny woven look or the subtle colour gradient can be worn on the outside.

STOLL-knit and wear<sup>®</sup> Intarsia sweater for women in a casual linen and viscose material mix. The Inverse plating in each Intarsia area results in an interesting matt/shiny contrast.



From wellness to sports and vice versa, embellish your Yoga bolster as a luxurious sofa cushion with this Fully Fashion jerseycover in 2-colour Jacquard selective plush design. The multicoloured effect, that changes with every movement, is achieved by STOLL-ikat plating<sup>®</sup> combined with the 2-colour Jacquard design.



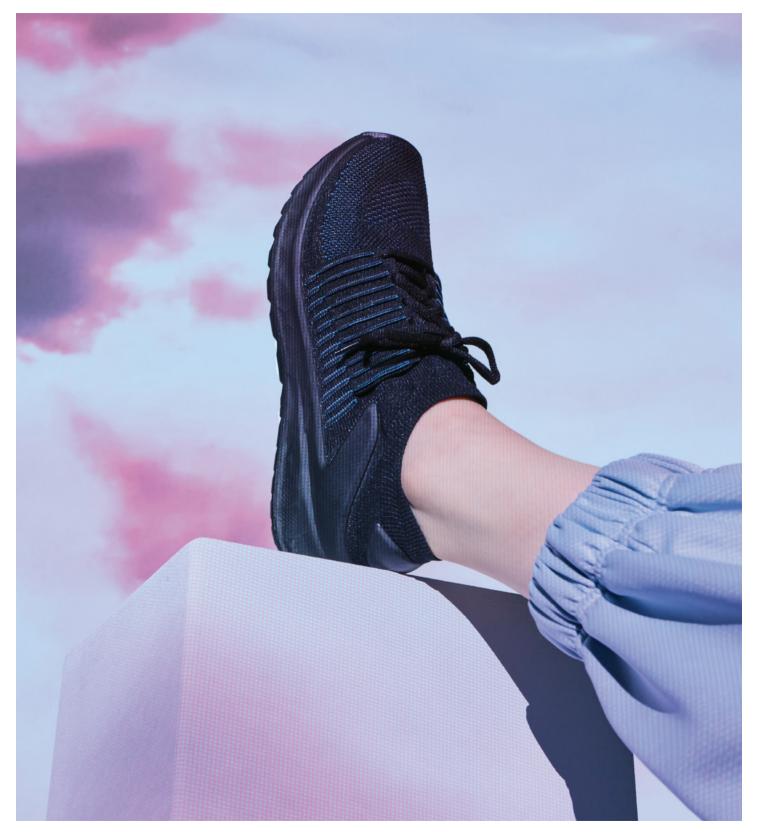


2110064 / Women's Intarsia sweater ADF 830-24 ki W knit and wear / E 7.2 STOLL-knit and wear®



2110072 / Yoga bolster jerseycover ADF 530-32 ki W / E 18m.16 STOLL-ikat plating® STOLL-knit and wear<sup>®</sup> fine gauge shoe upper with knitted-on shoelace flaps. The use of melting yarn adds stability and reinforcement for better shape properties.

Collaborating with DESMA for the company's expertise in direct soling and DEStip technology enables an innovative shoe manufacturing process for lead-time optimization, as well as optimum shoe upper comfort and fit.





2110034 / 3D fine gauge shoe upper ADF 330-32 ki BcW knit and wear / E 9.2 STOLL-knit and wear® / STOLL-ikat plating®



2110029/STOLL-weave-in® men's sweater ADF 830-24 ki W knit and wear/E 10.2 STOLL-knit and wear® with stamp out/STOLL-weave-in® Fine gauge men's STOLL-knit and wear<sup>®</sup> sweater made from 100% wool in STOLL-weave-in<sup>®</sup> design and linked on collar. The subtle shaded effect in the breast bordure is achieved by STOLL-ikat plating<sup>®</sup> artwork in the knitted base and enhanced by different STOLL-weave-in<sup>®</sup> structures. Multipurpose pillow for children in a playful 2-colour relief Jacquard plush design preshaped with goring. The wonderful colour changing effect responds to every movement and is achieved by STOLL-ikat plating<sup>®</sup> in the 3D plush. Snuggle up to it as a travel neck pillow or play with it at home. The millet filled chameleon adapts naturally to every movement you make.

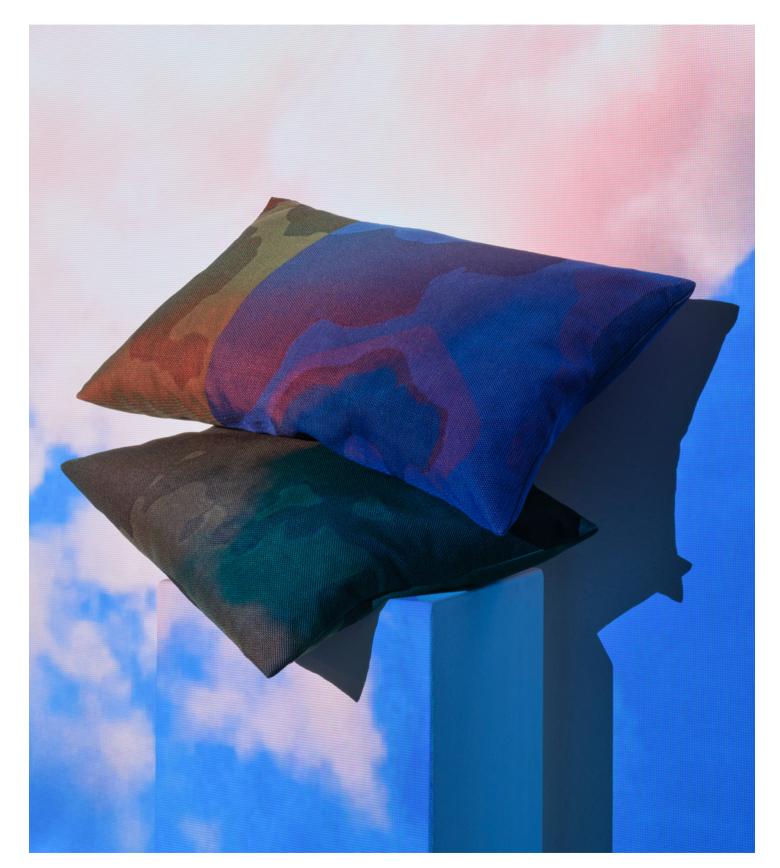




2110050 / Children's travel neck pillow ADF 530-32 ki W / E 18m.16 STOLL-ikat plating®



Multicoloured pillow case with multiple artworks, each visible from a different perspective. The fluctuating colour and artwork effect is created by using STOLL-ikat plating<sup>®</sup> on both back and front layers in a tubular petinet design.





2110077/Wonderful pillow ADF 530-32 ki W/E 18m.16 STOLL-ikat plating®



2110045 / Devoré Yoga shirt ADF 530-32 ki BcW multi gauge / E 7.2 Stoll-devoré knit® Fully Fashion Yoga shirt in devoré design. The op-art inspired rhomb artwork offers different breathability areas: slight transparent zones blend into opaque areas in a body mapping design. The garment is shaped in a batwing design for full freedom of movement. It is knitted in recycled lyocell that provides a comfortable stretch.

Multicoloured wall pattern with multiple artworks, each visible from a different perspective The wonderful fluctuating colour and artwork effect is created by using STOLL-ikat plating<sup>®</sup> on both back and front layers in a tubular petinet design.



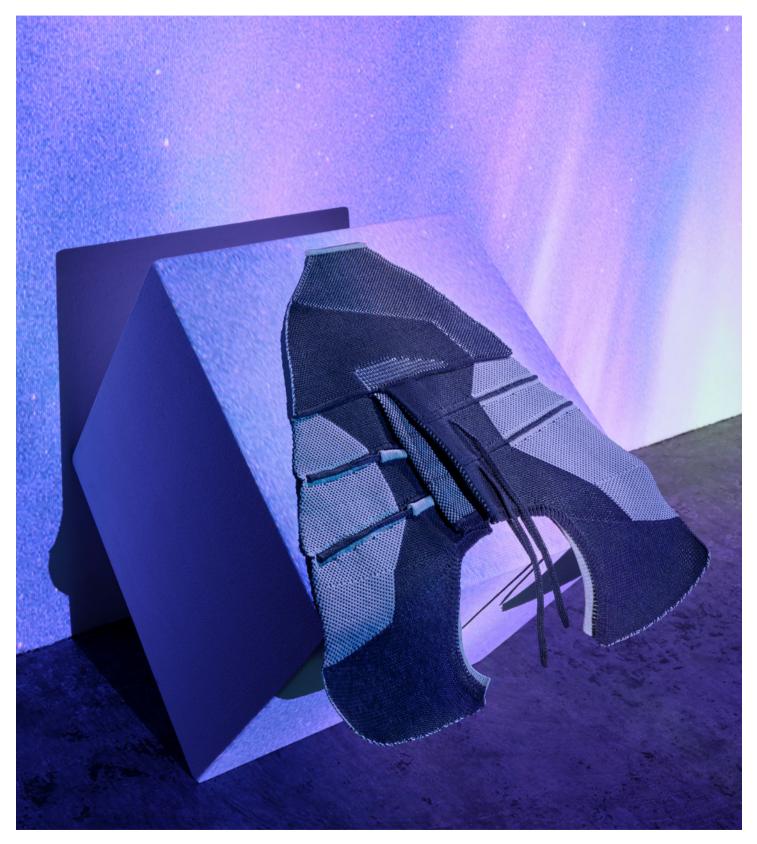




2110073 / Wonderful wall pattern ADF 530-32 ki W / E 18m.16 STOLL-ikat plating®



Knitted shoe upper with pleat closure design on the dorsum of the foot which is integrated directly in the machine with maximum racking effect and has knitted-on straps to enhance stability. The sustainable version of the shoe upper is knitted with Deja<sup>™</sup> – 100% recycled polyester yarn by Indorama Ventures and eco-friendly dyed with DyeCoo's innovative CO<sup>2</sup> technology without the use of water and process chemicals.





2010048 / Sustainable shoe upper with pleat ADF 530-32 ki W/E 7.2

# Industry collaboration between INDORAMA VENTURES, DYECOO and STOLL, a brand of the KARL MAYER GROUP



# Deja™ recycled polyester

Deja<sup>™</sup> is the sustainable recycled polyester brand from Indorama Ventures. The polyester performance yarn is made from 100% post-consumer recycled PET bottles and can be used for a multitude of home and apparel applications. The yarn is independently certified and traceable, with full transparency across raw material and processes including Global Recycle Standard, Ecomark, Recycled Claim Standard, Oeko-Tex 100 and Reach. Locally sourced 100% post-consumer rPET products offer a low-carbon footprint and closed loop solution.

#### Sustainable shoe upper

THE SUSTAINABLE SHOE UPPER is a collaboration between Indorama Ventures, DyeCoo and STOLL to produce a knitted shoe upper with a sustainable mindset throughout the whole production process, starting from the yarn production and followed by the dyeing, design and production. With the advanced technologies of the three companies, the shoe upper does not just eliminate waste, but also reduces the use of water and energy.





### CO<sub>2</sub> dyeing

The Deja<sup>™</sup> recycled yarn is dyed afterwards with the innovative carbon dioxide textile dyeing technology by the Dutch company DyeCoo at CleanDye factory. The sc-CO<sup>2</sup> dyeing machines can dye yarns or fabric rolls in a closed-loop process without using water and process chemicals, thereby not producing any wastewater. By using only the pure non-toxic Corangar dye-stuff made by Colourtex, in combination with sc-CO<sup>2</sup> that is for 95% reclaimed in the machine, textile dyeing has a reduced environmental impact compared to traditional dyeing technologies. As carbon dioxide has consistent quality every day and worldwide, the technology is reliable and reproducible.

### Design and production

The sustainable product advantages achieved through the use of Deja<sup>™</sup> recycled polyester and CO<sup>2</sup> dyeing technology are further enhanced with the design and production method.

Both the production method, as well as the design itself, take environmental and sustainable aspects into account. The Fully Fashion production method eliminates cut and sew and reduces production waste to below 1%. The shoe upper is knitted into one piece with integrated pleat closure on the dorsum of the foot and knitted-on straps for enhanced stability.

The shoe upper is knitted on a STOLL ADF 530-32 ki W machine, but can also be knitted on other types of STOLL machines. This allows for flexible local production independent of the machine park.

### About Indorama Ventures

Indorama Ventures Public Company Limited, listed in Thailand (Bloomberg ticker IVL.TB), is one of the world's leading petrochemical producers, with a global manufacturing footprint across Europe, Africa, Americas and Asia Pacific. The company's portfolio comprises Combined PET, Integrated Oxides and Derivatives, and Fibres. Indorama Ventures products serve automotive and major fast-moving consumer goods sectors, i.e. beverages, hygiene, personal care, tire and safety segments. Indorama Ventures has approx. 24 000 employees worldwide and consolidated revenue of US\$ 10.6 billion in 2020. The company is listed in the Dow Jones Emerging Markets and World Sustainability Indices.

www.indoramaventures.com www.dejamade.com

### About DyeCoo

The Dutch company DyeCoo Textile Systems BV has developed, optimized and commercialised the use of carbon dioxide to dye fabrics for the last 10 years and recently also to dye yarns. By utilizing CO<sup>2</sup>, the process eliminates water from the dyeing process, in a closed loop dyeing system. DyeCoo is the world's first commercial supplier of water-free and process-chemical free dyeing systems for polyester textiles. Using CO<sup>2</sup> dyeing will eliminate the use of water, reduce energy consumption, eliminate chemical usage and is cost effective.

www.dyecoo.com

Fully Fashion customizable baby bib with knitted-on laces: A digital imprint of your child's hand can be converted into a knitted baby bib. The 2-colour cross tubular Jacquard design has a subtle cloqué effect due to the use of elastic viscose yarn and tuck connection. The automatic production process and customization is supported by STOLL-autocreate<sup>®</sup>.





2010066 / Customizable baby bib BMS 52 ki / E 14 STOLL-autocreate® Fully Fashion baby sweater in 2-colour cross tubular Jacquard design with knitted-on laces. A customizable 3D preview created for this showcase adds a playful approach to machine operation: The selection of the desired nature-inspired design and colour combination can be applied directly on the machine before the sweater is knitted.





2110030 / Customizable baby sweater BMS 52 ki / E 14 STOLL-autocreate®

# Digitizing the knitwear design and development process



#### Images: Digital-only Intarsia and structure style generated with exported data of k.innovation CREATE. 3D render made in CLO.

Since becoming a part of the KARL MAYER Group, STOLL combined its expertise and creativity with the Business Unit KM.ON to develop software solutions for digitizing the knitwear design and development process.

The outcome of the collaboration is k.innovation CREATE (CREATE) for knitwear designers and k.innovation CREATE PLUS (CREATE PLUS) for knitting technicians. CREATE PLUS) for knitting technicians. CREATE is an integral part of CREATE PLUS, but it is also available as a stand-alone software. Both software products focus on speeding up the design-to-market workflow through digitization. In this context, these solutions provide open interfaces for virtual sampling with any external 3D software.

### Why was it important for STOLL to come up with a new digital solution for knitwear designers?

Due to the rapid shift of the industry towards digitization – especially during the COVID-19 pandemic – the implementation of 3D clothing software in product design and development became an industry standard. However, the common processes of 3D prototyping, that are predominantly developed for woven cut and sew products, are not suitable for the visualization of Fully Fashion garments. An additional knit specific software is required for the simulation of shaped knitwear structures, stitch densities, distortions, narrowing and widening sequences, etc. These details are characteristic for the creation of flat-knitted garments and should be considered when virtualizing a knitted fabric.

### From a 3D designer's perspective, what are the biggest advantages of the use of CREATE data for 3D sampling?

Usually a 3D sample requires a shape and scanned textures, which are mapped with repetition over the shape. This process addresses the cut and sew fabrication methods. But as we have the amazing and sustainable possibility to knit our garments directly in shape, a different approach is required. In addition, knitwear design is about creating the textile surface corresponding with the final form of a garment. For instance, an open interface allows users to import and export shapes for the 3D prototype. Besides, with CREATE designers are enabled to draw and combine stitches, colours and different varns directly in shape with a real-time stitch simulation preview. By exporting the preview, designers gain all necessary textures and maps for 3D sampling without any scanned real fabric. This saves us so much time and resources!

But it is not enough to just visualize the garment in 3D. This advanced design process should be linked with the final production and build a better basis for knitting technicians than before.

#### So CREATE and CREATE PLUS are also supporting a closer link from design to prototyping and the final production in the end?

Of course. Both, designers and technicians, get a common digital tool for an improved exchange and better communication between those two disciplines. It is unbelievable how helpful it is to have a digital foundation for product development.

We understand CREATE and CREATE PLUS as tools which simplify and enrich existing processes.

# How can a workflow with CREATE and CREATE PLUS look like?

CREATE has a collaborative approach and connects different stakeholders throughout the entire design and production process of Fully Fashion garments. Therefore and according to the company set-up, there are different workflow scenarios. On the one hand it is possible for the designer to start in CREATE. This addresses especially knitwear designers with deeper knowledge of stitch construction and pattern making. On the other hand, technicians can start with a digital program based on an inspirational source from the designer. Afterwards the technician can send the program as a digital file to the designer, who can modify details like colours, artworks, digital yarns, and so on. Instead of sending real physical swatches to each other, digital files are exchanged. The designs and shapes can be then exported as textures and maps for 3D prototyping. Once the digital design is approved and finalized, the technician can start with the first real prototype based on the modifications and 3D sample of the designer.

# What was the process like for the two 3D sample styles?

We got inspired by a real Intarsia swatch and took advantage of the already given stitch density and gauge of the swatch. This was the starting point for constructing the Fully Fashion shape and designing the stitches. With CREATE it was so easy and inspiring to play with different colour combinations, yarns and structures. One style consists the Intarsia graphic with new color combinations and a second alteration shows the style with various stitch constructions in uni colour. All designed data came together in an external 3D software and build the virtualization of the garment.



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Special thanks to Matteo Comunello for the shoe prototyping for pattern no. 2010048.

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