



# Useases for 3D technologies in apparel industries

L. H. Preußer

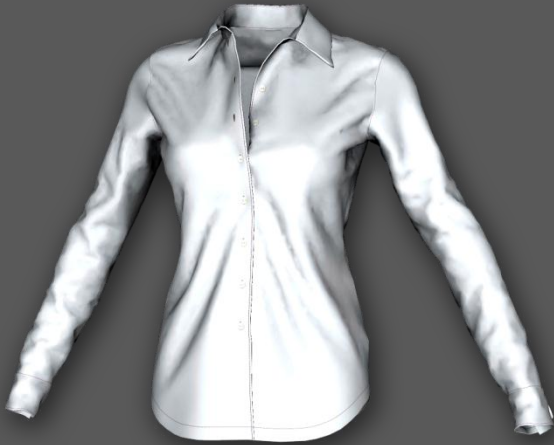


## What I always wanted to do with 3D simulation

- > **Virtual design in 3D**
- > Check sizing and fitting
- > Check fit and usability in motion
- > Present virtual fashion show
- > Verify made to measure on POS
- > Use 3D models in communication:
  - Collection planing and PLM
  - Design and pattern making
  - Virtual prototypes
  - Product management and marketing
  - Customer panel and orderbook
  - Webshop and online configuration
  - Virtual salesman samples

## Create individual design in four steps

Step1



Simulate garment

## Create individual design in four steps

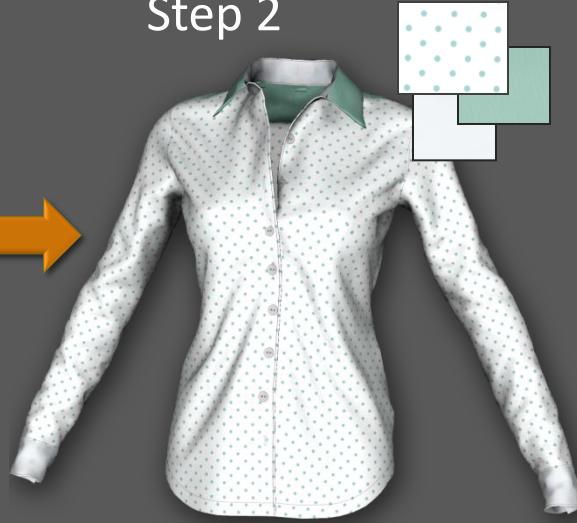
Step 1



Simulate garment



Step 2



Select fabric textures

## Create individual design in four steps

Step 1



Simulate garment



Step 2



Select fabric textures



Step 3



Place applications, prints and logos

## Create individual design in four steps



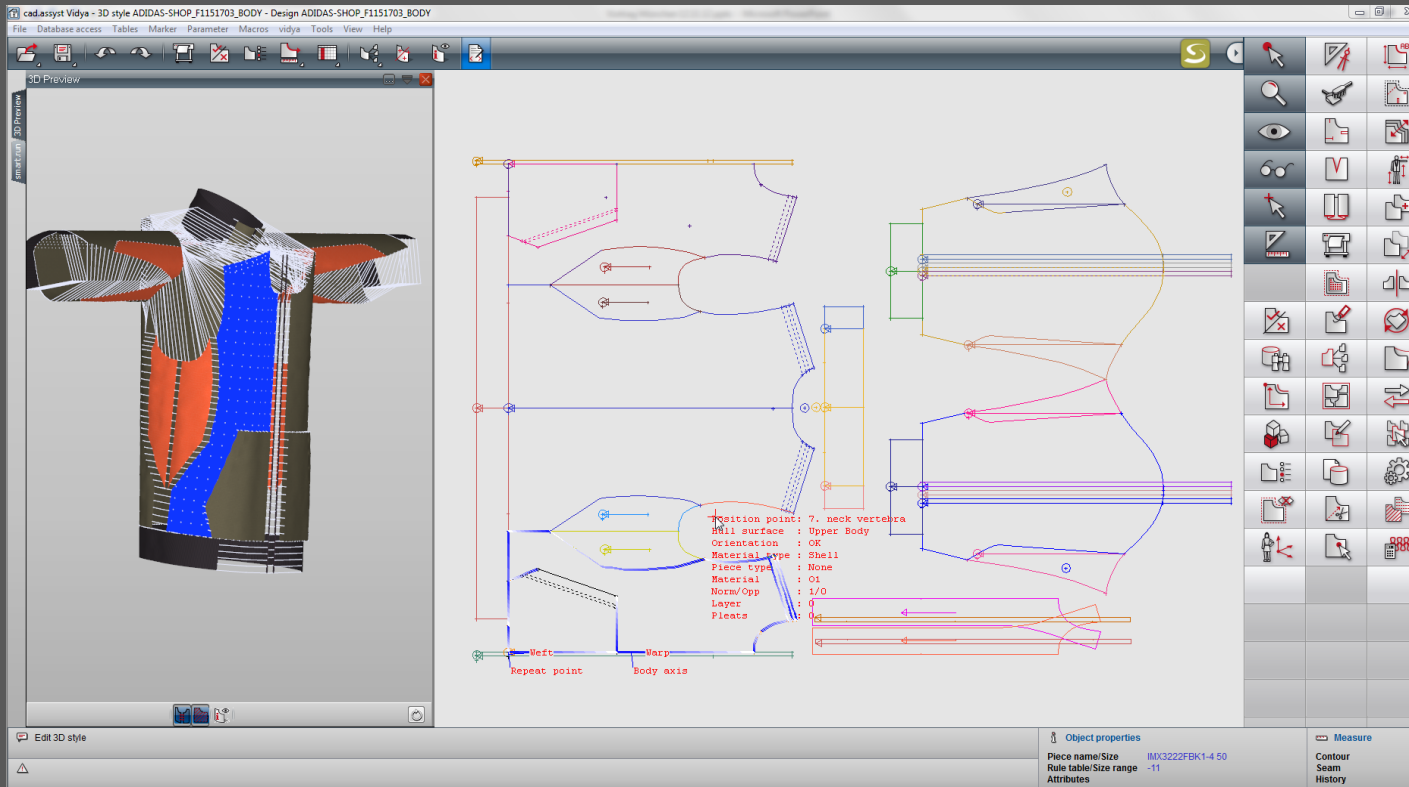
### Step 4

Automarker.com creates marker in PDF format with complete texture layout ...

... process PDF in ERGOSOFT and print on large scale fabric printer. Cut and sew prototype

# Virtual design in 3D

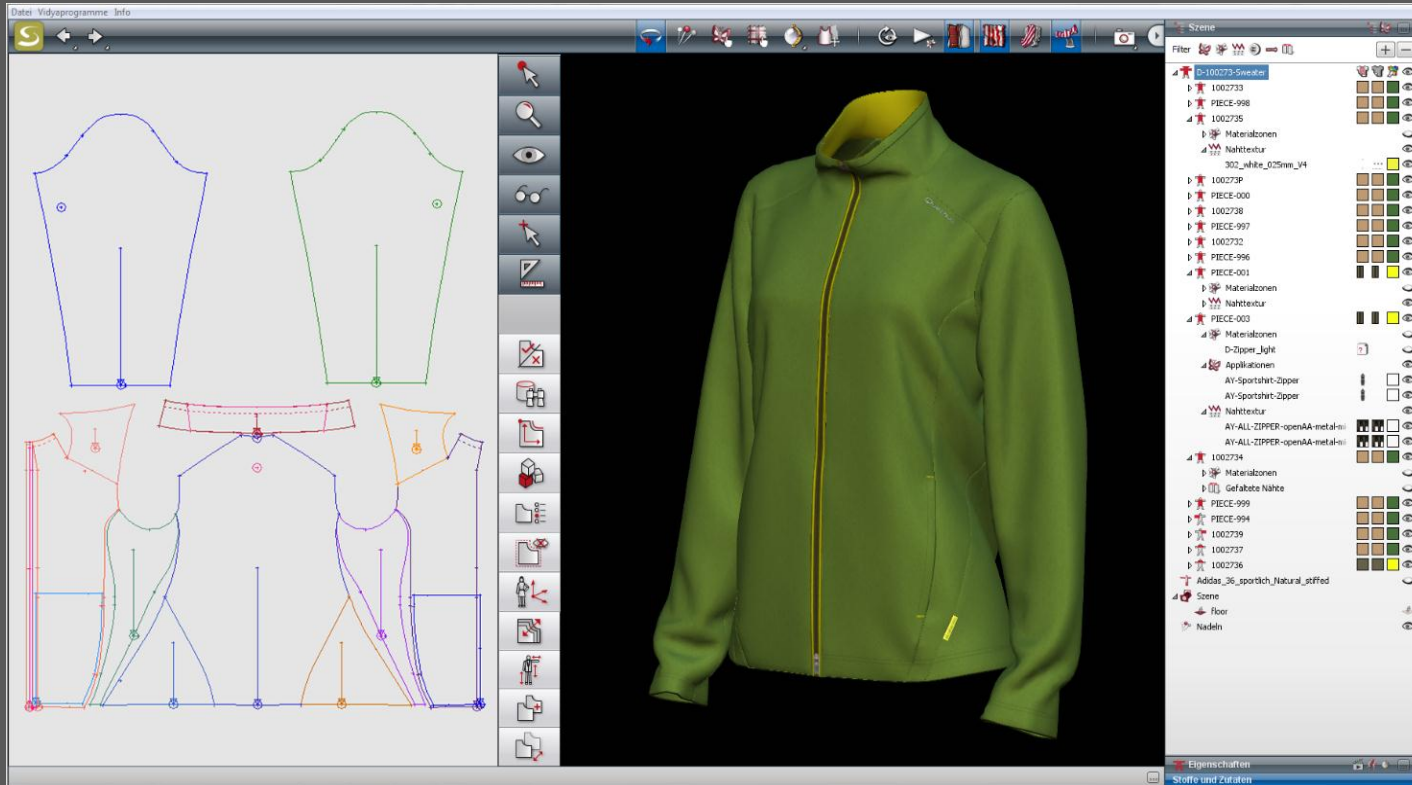
3D goes 2D



- > 3D preview of garment during data preparation
- > Support user when editing complex models
- > Instant validation of every process step in 3D

# Virtual design in 3D

2D goes 3D

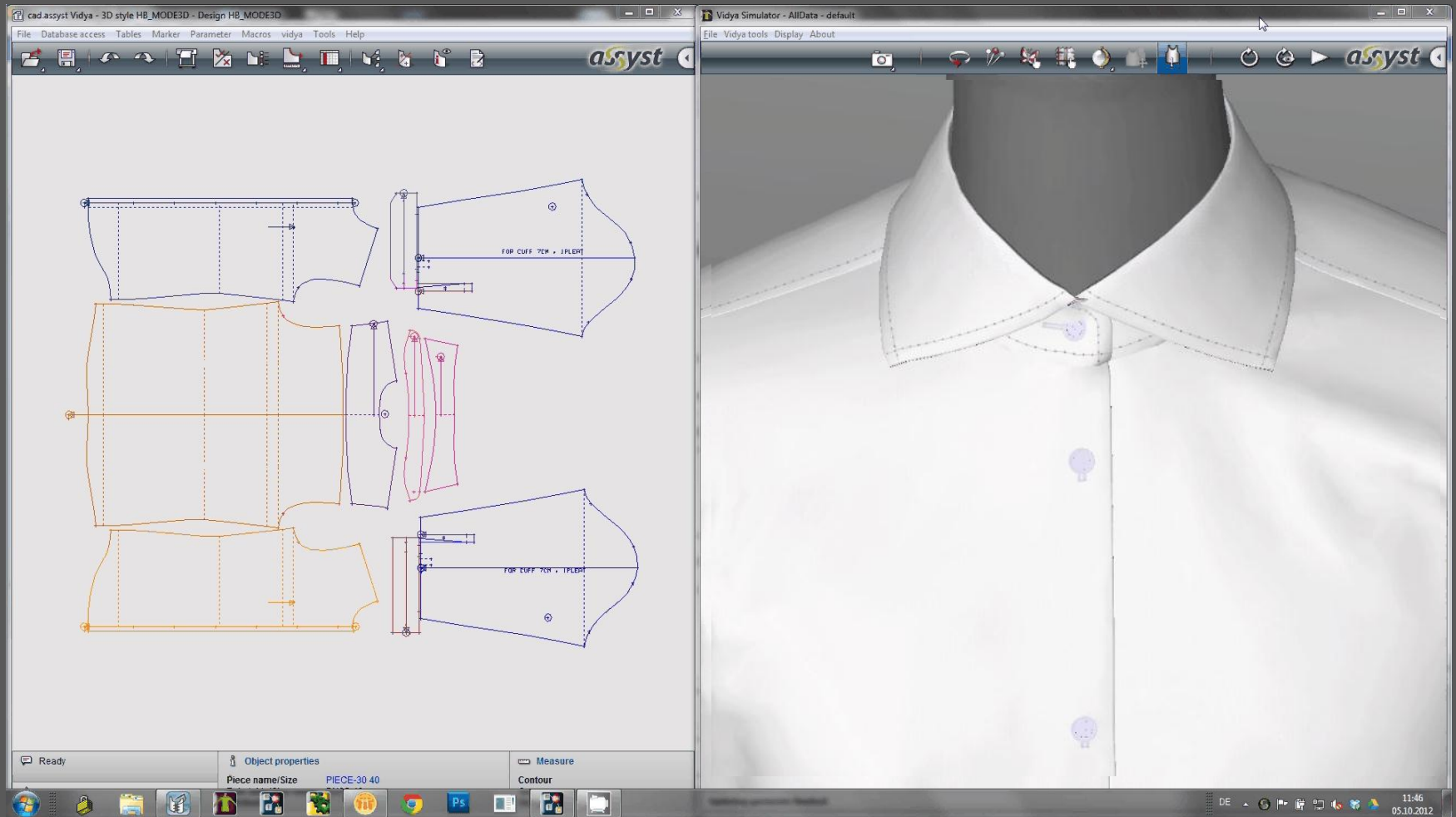


- > Editing 2D-pattern and updating simulation with new geometry
- > Preview of worksteps and instant validation of data preparation
- > Integrated tool for design and pattern making



# Virtual design in 3D

## 3D/2D Interaction - Prototype

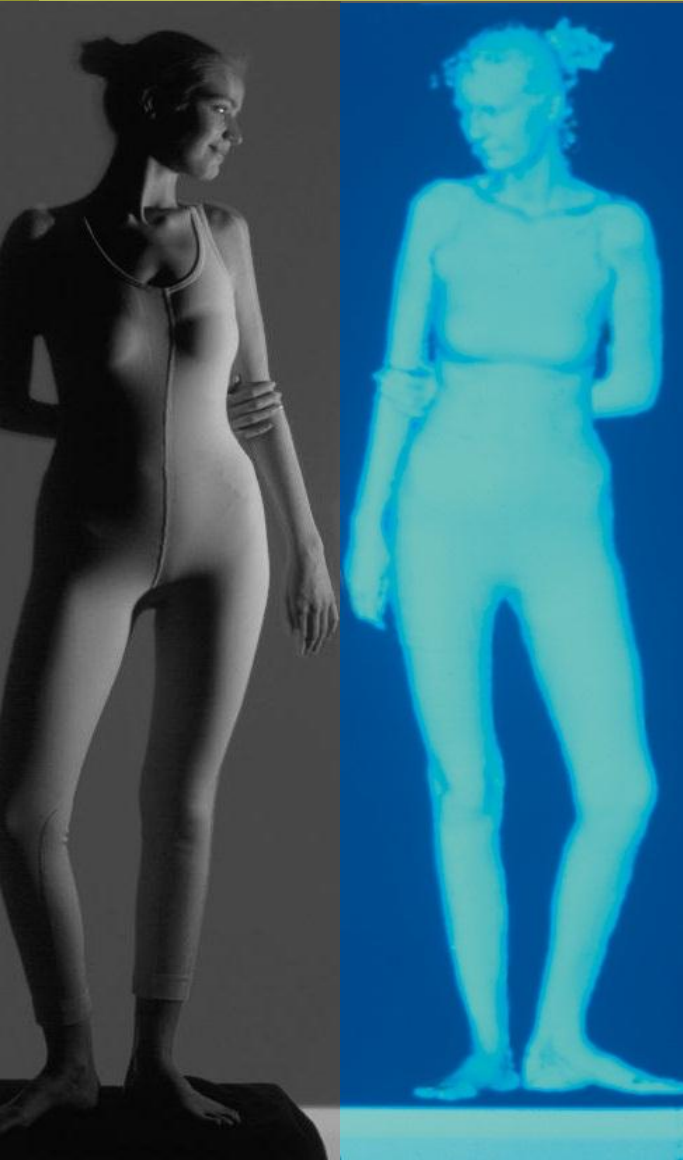




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# Check sizing and fitting



- > Proof fit on scanatars that derive from scans of real human bodies with reliable shapes
- > Use scanatars that exactly fit your table of measurements or those made from a scan of your house model or fitting bust
- > Proof fit of graded pattern that are set up for garment production
- > Replace draping paper models on busts
- > Simulate the graded sizes of a garment, with no extra effort in data preparation
- > Verify the feasibility of fabrics with different elongation and elasticity
- > Verify fit by simulating distance field, tension field and elongation of fabric

# Types of scanatare?

## SizeGERMANY- Standardscanatar

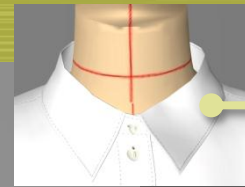
Available as virtual scanatar and as real bust for fitting and fit optimisation

Corresponding measure lines

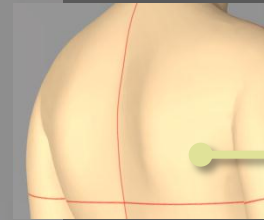
Realistic shape of lower arm including wrist for fitting length and shape of sleeve

Natural shape of gluteal fold, designed for fitting tight trousers in virtual or real

Rudimentary heels approach to evaluate the length of a pants



Optimal neck length for the virtual try-on of products with collar



Shoulder blades and collarbones are visible

optimized by  
www.SizeGERMANY.de  
Original SizeGERMANY  
DOB 38

Your company  
Logo / CI

### Recommended use :

- Companies that use the SizeGERMANY-size table
- Comparison of the results of virtual fitting in Vidya against the fit on the real SizeGERMANY Bust

# Types of scanatare?

## Scanatar of any person

Possibility to adapt body measurements

Originated from the 3D body scan of the real person

Modeled after a real person regarding 3D body shape, posture and measurements

Animation made easy with underlying skeleton

Allows fit comparison on real and virtual try-on model in vidya



### Recommended use :

- For companies looking to virtualize their fit model for use in Vidya
- Allows comparison of the results of simulated fit with the real fit of the model
- Companies who know that their house model is not due to the measurements of the size chart, virtual bodys can be adjusted to perfect correspondence

# Types of scanatare?

## Scanatars specific to target groups

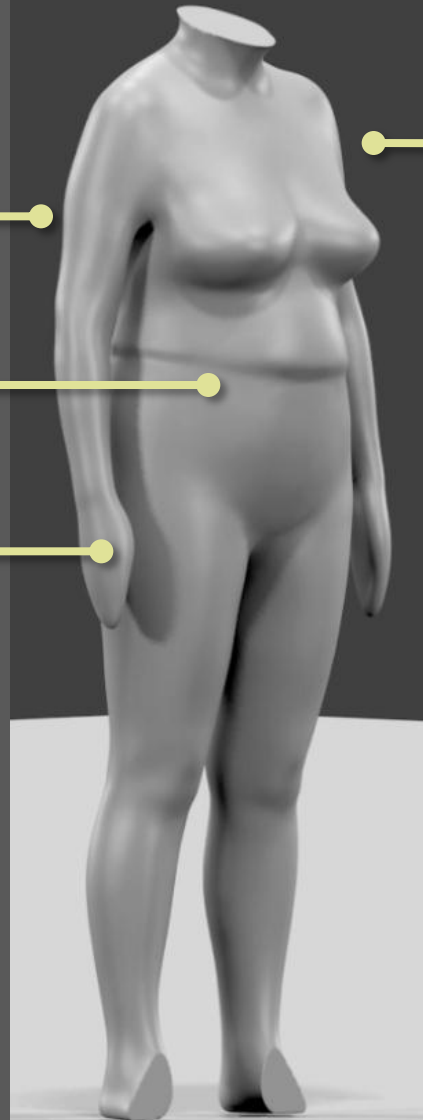
Modeled arm and leg gap implemented on the bust

Modeled stomach fold for pants fitting

Hands, averaged

Scans of body parts  
e.g. for development of shin  
protection based an averaged  
scanatars of male soccer  
players

Foot, realistic



Female Scanatar size 46 for the target group 50 +. Bust is based on 50 averaged, individual scans.

### Recommended use :

- Companies that have a target group with very individual 3D body shape and the need to visualize precisely these features on a Scanatar
- Companies that want to use an individual Scanatar specific for the target group in Vidya
- Companies that want to use the Scanatur to develop customised fitting busts



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# Check fit and usability in motion



- > Setup individual poses to check fit or usability
- > Detect fit and usability issues, like too short sleeves, during animation of scanatar
- > Verify fit by viewing distance fields
- > Verify fit by viewing tension fields
- > Verify fit by viewing fabric elongation
- > All colormaps are differentiated in weft and warp to determine problems due to direction of weave





# Check fit and usability in motion





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# Present virtual fashion show



- > Use motion tracking, sequences of OBJs or skeletal animations to create catwalk animations or complex movements
- > Play animations with complex garments or complete outfits
- > Record animation as movie or export vertex changes to 3<sup>rd</sup> party tools for complex setup and arrangement of virtual fashion shows, including photorealistic rendering

# Present virtual fashion show





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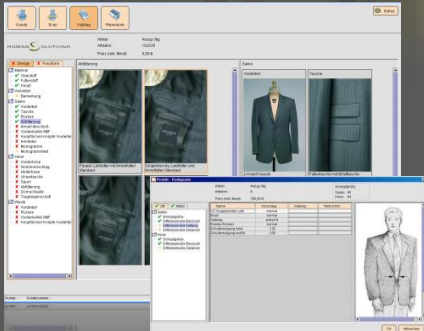
# Verify made to measure on POS

## 3D Scan and MtM garment configuration

### 3D Body Scan

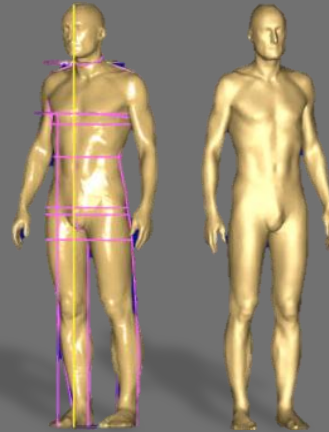


### INTAILOR

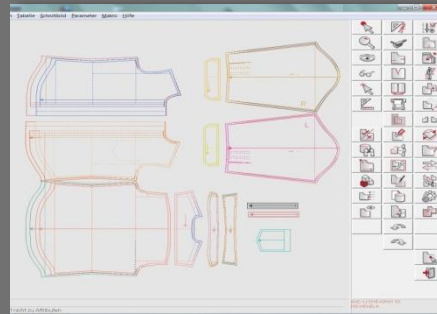


## Scanatar generation and pattern alteration

### 3D Scanatar generation



### CAD & MTM



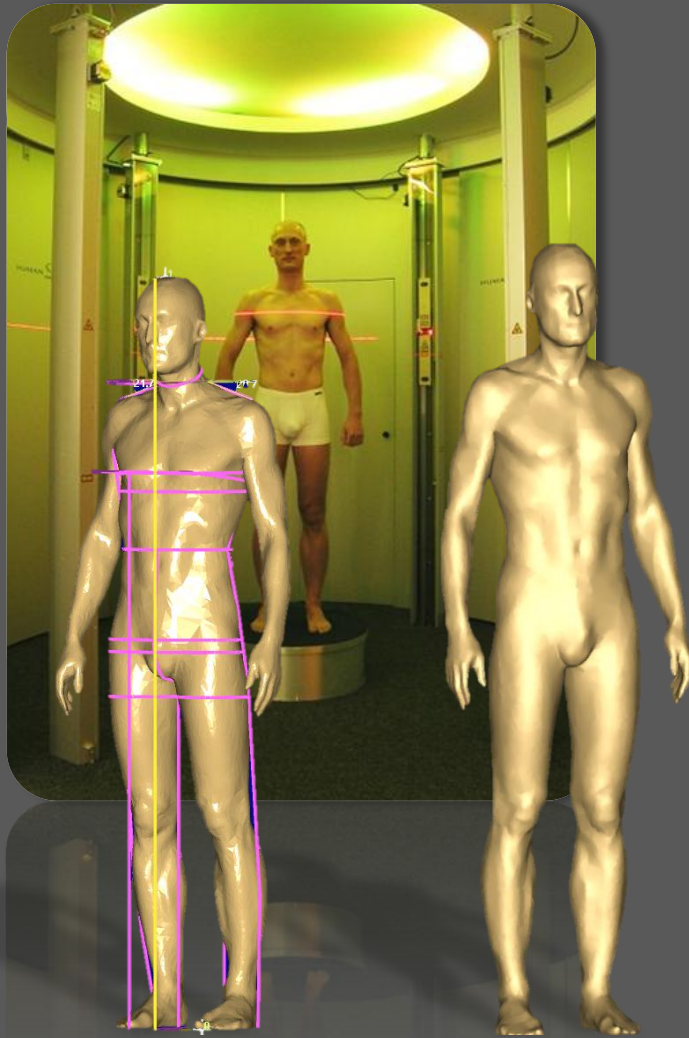
## Virtual Mirror

### 3D Visualization



### VIDYA

# Verify made to measure on POS



## Step 1: 3D body scanning

- > Get scanned on POS
- > Body measurements are taken automatically to alter the pattern for your Made to measure garment
- > Automatic generation of your 3D scanatar for virtual try-on

## Step 2: Garment configuration

- > Select garment from the digital catalog of INTAILOR
- > Choose variants, options and accessories for your MtM garment
- > Get recommendation of base size and alteration values
- > Send the order and details of the Made to Measure garment to the manufacturer

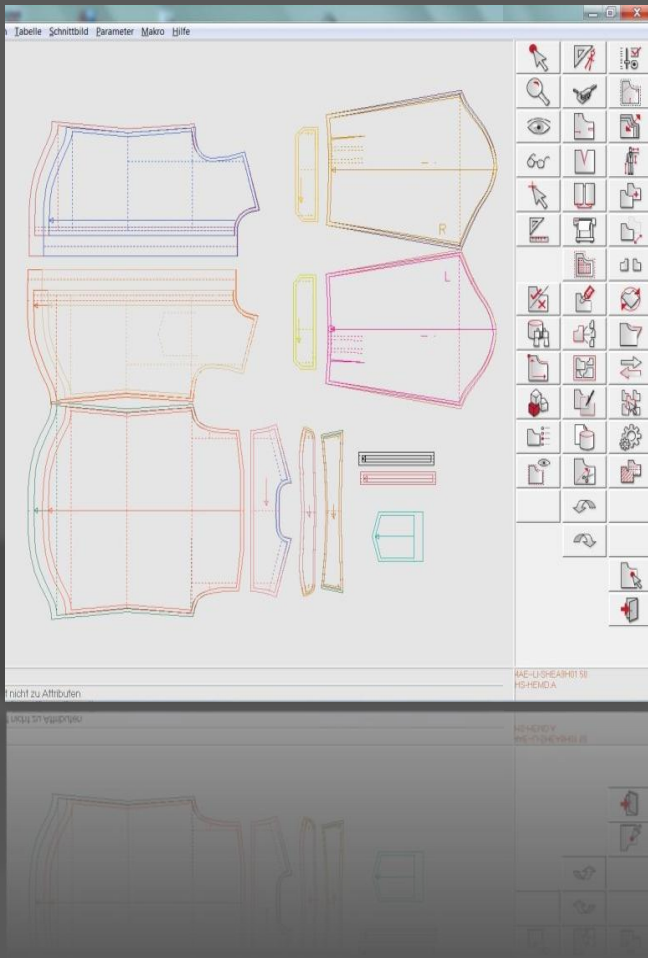
The screenshot displays the HUMAN SOLUTIONS software interface for garment configuration. The top section shows a digital catalog of garments, including a suit jacket. Below this, a window titled 'Hose für Hemdsimulation' displays a table of measurement data and a 3D model of a man in a suit. The table lists various measurements and their recommended values and ranges.

Name	Vorschlag...	Wert (cm)	Bereich (...)	keine Vorschau möglich...
Halsumfang	0,4	0,0	-15,0 ... 15,0	
Brustumfang	5,9	6,0	-30,0 ... 30,0	
Bauchumfang	5,1	4,0	-35,0 ... 35,0	
Gesäßumfang	-1,9	-2,0	-35,0 ... 35,0	
Armellänge link	2,7	2,0	-15,0 ... 15,0	
Armellänge rech	0,9	2,0	-15,0 ... 15,0	

Buttons at the bottom include 'Virtuelle Anprobe', 'In den Warenkorb', and 'Schließen'. The interface also shows customer information: 'Kunde: Udo MIM', 'Kundennummer: KU0009', 'Benutzer: admin', and '17.05.2011 18:49'.



# Verify made to measure on POS



## Step 3: Pattern and 3D simulation

- > Integrated order handover to CAD and VIDYA
- > Fully automatic grading and altering of pattern in CAD.assyst, based on individual measurements of the customer and his selection of style
- > Garment simulation on the individual scanatar of the customer



## Step 4: Interactiv styling and fitting

- > Visualize multiple garments
- > Interactive styling
  - Combine fabrics, lining, buttons and accessories
  - Select options like pockets, collar or cuffs from a catalog
- > Interactive fitting by modifying the garments measurements
- > All changes are stored with the order and made available for production



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# Use 3D models in communication



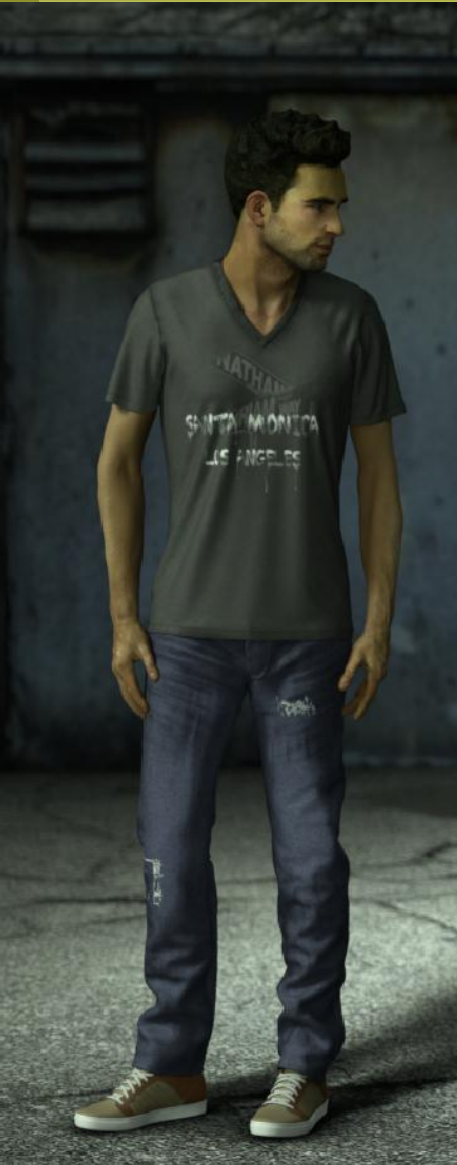
- > Screenshots of 3D-Models in PDM give visual impression at an early stage of development
- > Availability of digital models at an early stage of collection development, allow for better visualization of collection
- > Color- and material ways support the user in collection planning and for decisions on take overs from previous collection
- > Communicate complex colorways without having real prototypes
- > Simulate and modify silhouettes during design process and verify pattern making against designers ideas before prototyping
- > Save on iterations and costs of prototyping

# Use 3D models in communication



- > Availability of virtual prototypes helps to involve product management and marketing at an early stage of collection development
- > Visualize shop layouts and presentation of merchandise in 3D tools
- > Start customer or reseller panels during the development of collections
- > Spot drop outs before producing prototypes
- > Replace drawings in order books with 3D models to give a better impression and overview over a collection
- > Replace salesman samples of colorways and substitute with photorealistic renderings

# Use 3D models in communication



# Use 3D models in communication



- > Vidya delivers perfect 3D models for further use in 3<sup>rd</sup> party tools such as DeltaGen, Maya, 3D StudioMax, DAZ, Bryce, ...
- > Screenshots and close ups of virtual garments can be rendered directly in vidya or the 3D models can be exported for postprocessing
- > Vidya creates virtual content for your website or webshop without having any real samples
- > Online configurators for individual clothing can be configured with less effort, if they are not based on real garments, because design elements can easily be exchanged
- > Picture based 3D views from all angles are created directly from Vidya

# Use 3D models in communication

Wrangler

WE ARE ANIMALS

WRANGLER

COMPANY / STORE FINDER



GET YOUR  
EDGE BACK

SHARE  
HD IS ON  
SOUND IS ON  
ENTER FULLSCREEN

×

CLOSE COLLECTION SS12

◀

PREVIOUS OUTFIT



BEN JEANS  
LS DIAMOND SHIRT

▶

NEXT OUTFIT



IP STATEMENT / PRIVACY POLICY




# Use 3D models in communication

miadidas 

Suchen 

Händlersuche

Einloggen

Deine Bestellung 

MÄNNER ▾ FRAUEN ▾ JUGEND ▾

Zurück | Home > Männer > Kleidung

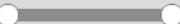
## Filter

- Geschlecht: Männer
- Produktkategorie: Kleidung

Alles löschen

## Filtern nach

- Sport
  - Basketball (3)
  - Fußball (9)
  - Handball (2)
  - Mehr Sportarten (4)
  - Running (2)
  - Training (1)
  - Volleyball (2)

Preis  
€ 40  € 135

## Produkt Größe

3XS	2XS	XS	XS/L
S	S/L	S/T	M
ML	MT	L	L/L
L/T	XL	XL/L	XL/T
2XL	2XL/L	2X/T	3XL
3XL/L	3X/T	4XL	4X/T
5XL	5X/T	2	3
4	5	6	7
8	9	10	11
12	13	14	15
16			

Label  
Performance (23)

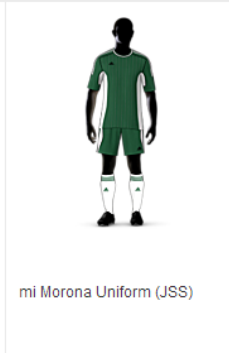
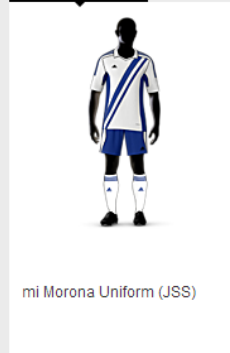
Sortieren nach: Populärste ▾

Artikel pro Seite 16 ▾ [Alle anzeigen](#) 1 2 

## mi Morona Uniform (JSS) Fußball - Männer

Neues Design anlegen

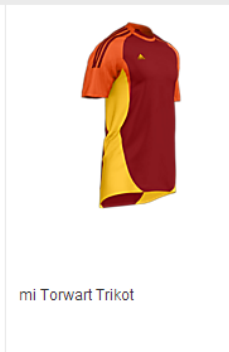
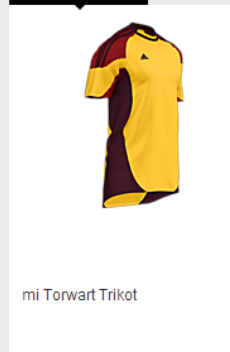
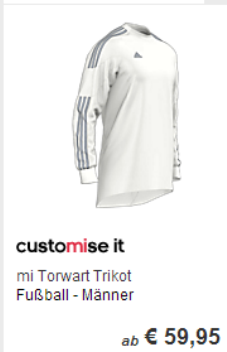
Design-Ideen



## mi Torwart Trikot Fußball - Männer

Neues Design anlegen

Design-Ideen





# Thank you for your attention!

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