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## NEWSLETTER

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## Introduction

### Human Body Measurement Newsletter

Homometrica Consulting introduces  
the second issue of the newsletter

by the Editor Nicola D'Apuzzo,  
Homometrica Consulting, Switzerland



I am very glad to introduce and present the second issue of the *Human Body Measurement Newsletter*. The first number had a positive unexpected success: it was in fact downloaded more than thousand times from April until September 2005.

I hope the number of downloads will continue to increase and the newsletter will provoke even more interest and discussions.

The contents of this issue are multi-disciplinary, as the human body measurement technologies are. Four different medical applications are presented: the measurement of cellulite, the determination of changes in plastic facial surgery, a futuristic project in the forensic medicine and the application of virtual reality for psychotherapy.

The word *virtual* is often used in combination with the 3D measurement of the human body, four examples are presented in the newsletter: the virtual try-on of eyewear, the next generation of interactive mobile games proposing a virtual girlfriend, a virtual fashion design application and a virtual dressing room. Still, many other application fields are already successfully taking advantages from 3D human body measurement technologies, such as security, ergonomics, anthropology, cosmetics, animations or commercials. I will try to cover them all in the future issues of the newsletter.

In this short introduction, I would also like to spend some words about 3D full body scanners. In fact, a new product has been recently presented in Belgium. The number of new full body scanners launched in the market in the last ten months is five (from Korea, USA, Belgium and two from Germany). Moreover, there are rumors about an Italian company developing a new full body scanner. Before the launch of these new products, the companies offering 3D full body scanners were only eight. Therefore, these could be indices about an increase of both the interest and the market potential of 3D full body scanners and their applications, especially in the fashion industry.

I wish you pleasant moments by reading this second issue of the *Human Body Measurement Newsletter*.

## Technology

### Eyetrionics InfraScan

A new 3D full body scanner  
developed for fit & health centers

Sources:  
Eyetrionics, Belgium, [www.eyetrionics.com](http://www.eyetrionics.com)  
InfraLigne, Belgium, [www.infraligne.be](http://www.infraligne.be)



InfraScan 3D full body scanner

Software will automatically calculate 3D polygonal data based on the pattern deformations on the subject. The 3D full body model of the person standing in the cabin is automatically computed. Additionally, software automatically derive measurements as waist, belly, chest and other customizable measurements. The total scanning process takes less than 5 seconds, and measurements are calculated within 30 seconds.



Inside the cabin of InfraScan 3D full body scanner and the detail of the acquisition unit

Eyetrionics (Belgium) launches *InfraScan*, a new full body scanner. *InfraScan* is an innovative cost-effective body scanning solution designed and developed by Eyetrionics, in close collaboration with InfraLigne (Belgium), a chain of fit and health centers.

*InfraScan* consists of a cabin in which the person will stand in the middle, legs slightly and arms fully spread. A frontal and rear unit captures the front and back of the person. The process is based on Eyetrionics' patented technology to derive 3D models from one single image. A pattern is projected onto the person, while a camera takes one snapshot.

InfraScan scanner will replace the ribbon meter measurement method in the fit and health centers of InfraLigne in Belgium. The advantages are clear: there will be no more a direct contact between the customer and the staff of the fit center and the results of the measurements will be objective and without errors. Moreover all the measurements will be registered automatically and kept in the computer as comparison material for further visits of the customer to the fit center.

Additional information about *InfraScan* and other products of Eyetrionics can be found at the web address: [www.eyetrionics.com](http://www.eyetrionics.com).

## Technology

### PRIMOS handheld and PRIMOS body II

New products from GFM - Germany and applications in maxillofacial surgery

by Christian Benderoth,  
GFMesstechnik, Germany

GFMesstechnik GmbH, based in Teltow (Berlin), Germany, presented recently two newly products of its series *Life Science*: a hand-held 3D skin scanner and a portable 3D face and body scanner. The company GFM was founded in 1995. Its economic activity is the development, the building and the marketing of optical measuring and inspection systems based on digital fringe projection technology. The main fields of application of the *Life Science* series are cosmetic industry, medicine, criminology and plastic surgery.

#### PRIMOS handheld - 3D skin scanner

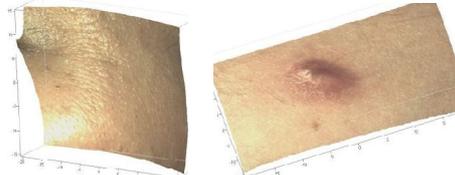


3D data acquisition by PRIMOS handheld

The non-contact optical 3D in vivo skin measuring system *PRIMOS handheld* serves the fast, precise and direct acquisition of skin surface. It becomes more mobile compared to the previous version (*PRIMOS compact*). The engineers of GFM succeeded in integrating the illumination unit in form of a LED lighting into the measuring head. The Notebook controlled sensor is much more easy to transport, and universally applicable.

Recommended application for the hand-held 3D in vivo scanner are: wounds, scars, wrinkles, melanoma (topography), naevi, knots, etc. By means of the respective software the received skin profile can be evaluated in terms of all parameters of interest such as roughnesses, volumes of wrinkles or scars or, respectively their geometrical dimensions.

Furthermore it is possible to perform comparative measurements at a treated skin area. Spatial displacements and tilts between the delayed measurements will be compensated by the software and the height pictures for further evaluation are brought into exact match.



3D data examples: wrinkle and wound measurements

#### PRIMOS body II - 3D face and body scanner



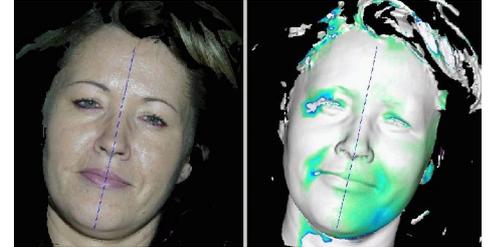
PRIMOS body II - portable 3D face and body scanner

The optical 3D measuring device *PRIMOS body II* enables the complete 3D measurement of the human face or of parts of human body as well as the simultaneous acquisition of color information for the measured area. The amelioration of the new version in the integration of a high-resolution (6.1 mega pixels) SLR digital camera, allowing the visual appraisal of finest structures, lines and wrinkles. Additionally, the system dimensions and weight were reduced, what permits a more flexible use. The speed of the measuring data acquisition is not affected by the use of the third camera and remains further under 0.5 seconds per 3D image. In case of a measuring area of 300x200 mm the measurement of the 3D profile is performed with an accuracy of 50 µm. This high accuracy allows the application in the cosmetic and medical fields, especially in the dermatology, the plastic surgery, the aesthetic medicine, the orthopedics, and in the biometry. The measuring and evaluation software generates polygon models which enable the comparison of areas to be investigated before and after a treatment.

#### Applications in maxillofacial surgery

In the context of a dissertation, possibilities for the evaluation and quality assurance with the optical 3D scanner *PRIMOS body* were tested by plastic surgeries within the face range. For the study, rhinophym patients as well as patients from the oral and maxillofacial surgery were examined.

The combination of the GFM face scanners with the software particularly developed for these purposes, makes possible a reproducible acquisition of patient data and their archiving. The software option "matching" provides the direct comparison of different therapy phases and the qualitative and quantitative evaluation of treatment results.



3D scan data and comparison (colors code the difference ranges)

The differences before and after the treatment could be clearly shown by 2D cross sections. Beyond that, it is possible to accomplish an accurate volume determination which permits a quantitative statement about the volume of the removed tissue and the shifted lower jaw.



2D cross sections showing difference between pre- and post-operative 3D scan data

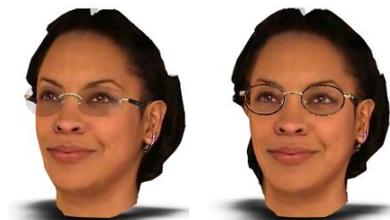
The export of *PRIMOS body*'s measurement data is also possible to 3D compatible STL files. The STL files are readable in the most commend 3D software tools and allow also to use the data for the producing of face masks with a 3D plotter or by 3D milling.

Additional information about GFM and its products can be found at the web address: [www.gfmesstechnik.com](http://www.gfmesstechnik.com).

### Visionix 3D iView

The world's first commercial 3D virtual-try-on system for eyewear

Source:  
Visionix, USA, [www.visionix.com](http://www.visionix.com)



3D virtual-try-on of two different frames

3D *iView* Technology brings innovation to the optical market, offering the world's first commercial 3D virtual-try-on system of eyewear for retail and website applications. Patented technology creates a three dimensional image of a person's face with selected 3D virtual frame and lenses, enabling a view from any angle.

3D *iView* (Or Yehuda, Israel) is a subsidiary of Visionix Ltd. (Malvern PA, USA), a leading developer and manufacturer of solutions for diagnostic lens equipment.

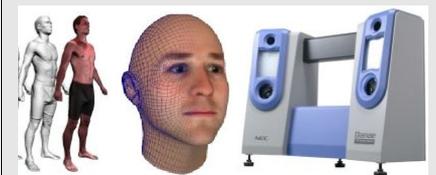
The 3D *iView* product captures a 3D facial view using six digital cameras in seconds. With this view, clients can then virtually 'try-on' a variety of 3D frames from extensive databases.



3D *iView* acquisition system is easy to use  
continues at page 3

#### ADVERTISEMENT

Are you looking for a 3D full body scanner, a 3D face scanner or other 3D scanning devices for the human body?



Get the most complete and regularly updated **list of companies and products:**

3D human body measurement systems, including comparison chart: €195

More information at: [www.homometrica.ch](http://www.homometrica.ch) or send an e-mail to: [info@homometrica.ch](mailto:info@homometrica.ch)

## Technology

### Visionix 3D iView

The world's first commercial  
3D virtual-try-on system for eyewear

*continues from page 2*

Frames are displayed in 3D on the computer screen and are visible from a variety of angles. In real time, the customer can change the orientation of the frame, zoom in and out, and receive a full view of their face with a variety of frames and lenses. In addition, an accurate and fast fitting can be done for the benefit of the optician.

The process works in three easy steps:

#### Step 1 - 3D face capture

At the point of sale, the 3D camera system captures 3D images and biometric measurements of a customer. 3D iView software generates a unique 3D view of the customer's face within seconds.

#### Step 2 - 3D frame and lenses selection

A database of 3D frames is presented to the customer. These frames are modeled in 3D by the Visionix process.

The customer can select from a limitless 3D virtual frames and lens inventory. The customer can see the frame, its texture and details in 3D, as well as visualize the different lens options.



Step 2 - 3D frame and lenses selection

#### Step 3 - 3D eyewear virtual-try-on

The customer face is displayed in 3D and the selected eyewear can be fitted virtually on the face. This process can be accessed also via Internet by the customer provided with a personal access code. He can restore his 3D face and virtually try-on eyewear remotely.



Step 3 - 3D eyewear virtual-try-on

Various are the benefits obtained for both customers and optical stores by using 3D iView system. From the point of view of the client: the unique high tech buying experience, the quick and easy way to select frames, the time saved on frame pre-selection, the possibility to share the frame selection with family and friends, the ability to see himself with new frames without lenses, the fast virtual try-on of new collections, and the private selection by Internet without obligation or embarrassment. From the point of view of the optical store: the augmented attractiveness of the store due to a unique purchasing experience, the reduced number of rejected frames due to accurate measurement, the saving on stock by holding less frame inventory, the extended availability of large collection of frames due to the virtual inventory, and the optician time saved by obtaining pre-selection of frames by the client.

Additional information about 3D iView and Visionix products can be found at the web address: [www.visionix.com](http://www.visionix.com).

## Research

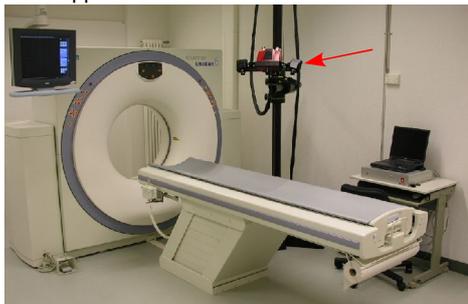
### Virtopsy research project

Documentation of the internal and external  
body morphology in forensic medicine

by Michael Thali and Ermin Aghayev,  
Institute of Forensic Medicine,  
University of Bern, Switzerland

Documentation of morphological findings on/in living and deceased is essential in forensic medicine. Until today, most of the documentation of forensic relevant medical findings was limited to traditional 2D photography, 2D radiographs, sketches and verbal description. At the Institute of Forensic Medicine at the University of Bern, Switzerland, 3D optical surface digitizing and cross-sectional radiological modalities were introduced within the research project *Virtopsy* for documentation and reconstruction of the internal and external body morphology of living or deceased persons as well as of objects.

For 3D body surface digitizing we are using the TRITOP/ATOS II system of GOM (Braunschweig, Germany). The system has the advantage that it can be used for true color surface documentation ranging from fine detailed structures (as skin lesion or fine instrument structure) to overview documentation (as whole body or entire vehicle). This could not previously be efficiently performed (time and quality) using other approaches.



Computer Tomograph Siemens Emotion 6 and 3D surface scanner GOM ATOS II (arrow)

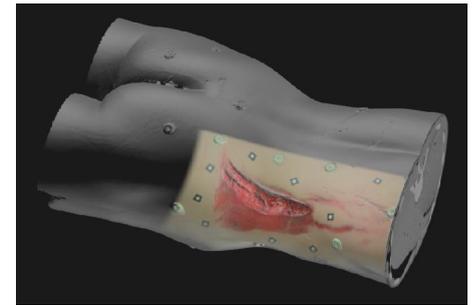
The manually acquired and automatically processed 3D TRITOP/ATOS data allows for real-data-based 3D animation, modeling, rendering and further 3D analysis. The next picture shows for example the 3D surface model of the whole body of an injured pedestrian and the 3D model of the involved vehicle. Both 3D surface models are very useful to determine the causes of the injury.



3D model of involved vehicle and colored 3D model of the injured pedestrian

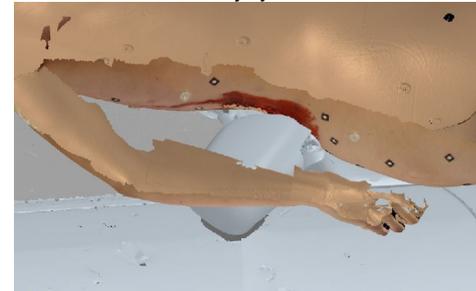
The internal body morphology is being digitally documented using Multi-Slice Computed Tomography (MSCT) and Magnetic Resonance Imaging (MRI). Impressive first results led to the acquisition of the own CT Scanner Emotion 6 (Siemens, Germany) by the Virtopsy research group. MRI is still performed at the University Hospital in Berne.

With the digital CT data, 3D-models of the bones and the body can be created. The internal injuries of the soft tissues and organs are better visualizable in the MRI cross sections. These radiological data and the 3D body surface data can be matched all in one complete 3D model, thus allowing for a comprehensive analysis of injuries. The next picture shows for example the all in one 3D model of the injured pedestrian. This allows for a match analysis between the injury and the injury-causing instrument.



All in one 3D model of the injured corpse

With publicly available software the documented real-data-based geometric findings on/in the body or object can be animated step by step or even by a movie clip. Using data merging/fusing and animation it is possible to answer reconstructive questions of the dynamic development of patterned injuries (morphologic imprints). In the last picture can for example be seen the results achieved by the analysis of the case: the broken mirror of the involved vehicle was the cause of the injury.



3D models of the injured corpse and the injury-causing instrument, in this case the broken mirror of the car

Real 3D data based documentation opens a new horizon for scientific reconstruction and animation by bringing added value and a real quality improvement in forensic science.

More information about the project and the working group are available at the Virtopsy homepage: [www.virtopsy.com](http://www.virtopsy.com).

## Research

### Special exhibition Computer.Medicine

Opening on October 24, 2006  
at the Heinz Nixdorf MuseumsForum

by *Gottfried Hermeyer,*  
*Heinz Nixdorf MuseumsForum, Germany*



*Heinz Nixdorf MuseumsForum in Paderborn, Germany*

On October 24, 2006 starts a special exhibition at Heinz Nixdorf MuseumsForum in Paderborn, Germany, on the topic of "Computer.Medizin". HNF is not only the world's largest computer museum but also a modern conference centre. The permanent exhibition depicts the history of information technology in a journey through time spanning five millennia, from the origins of numbers and characters right up to the 21st century. Visitors will find hightech exhibits waiting to be tried and tested. New worlds of experience such as robotics, artificial intelligence and mobile communications demonstrate the state of the art in present-day research. In addition to the hands-on experience offered in the permanent exhibition, around 700 annual events impart media competence and intellectual orientation in the information age.

The *Computer.Medizin* exhibition features the following four main areas of medical computer application:

- Physical wellness and a healthy lifestyle
- A view into the body
- Operations on the body
- Assistance for the body
- Special area Health card



*Preview of an hall of the Computer.Medizin exhibition*

For example the visitor shall be welcomed in a so-called virtual anatomical theatre in the entrance area. Here one experiences the virtual reality at the *iWall* of the Fraunhofer Institute and learns about the human body in different 3D data animations on the base of the Voxel-Man's Software. An in-vivo 3D digitisation system covers faces and structures of the human body quickly, with a high level of detail and precision. Laser scanning, body digitalisation and compression of data are also topics of the exhibition and are going to be presented in many different parts.

The organizers attach great importance to interactive applications and haptic experiences of the visitors. So the medical applications and their field of use shall also be demonstrated understandable for laymen.

An important criterion for the quality of the exhibition is its international orientation: it presents international standards. As many top exhibits as possible will be on show for the duration of the exhibition and, following the six months at the Heinz Nixdorf MuseumsForum, will tour to various other towns.

More information about the project and the working group are available at the Nixdorf MuseumsForum's homepage: [www.hnf.de](http://www.hnf.de).

#### ADVERTISEMENT

**3D Body Scanner**

**info@rsi.gmbh.de**  
**+49(0)6172-934090**

### CyberTherapy 2005

Short report about the use of  
3D Avatars in the psychotherapy

by *Nicola D'Apuzzo,*  
*Homometrica Consulting, Switzerland*

In Basel (Switzerland), from June 6th to 10th 2005, was held the 10th annual CyberTherapy Conference, together with 1st International Conference on Applied Technologies in Medicine and Neuroscience (ATMN 2005). The conference was organized by two neuroscience research institutions: the Interactive Media Institute (IMI), San Diego (CA), USA and Alma Advice GmbH, Basel, Switzerland.

The conference presented very interesting applications of virtual reality (VR) and augmented reality (AR) technologies in the psychotherapy. Even though the majority of the presentation were not relevant from a technical point of view, it was very interesting to become an overview of the possible exploitations of these 3D technologies for the psychotherapeutic treatment of disorders such as post traumatic stress disorder, phobias, schizophrenia, and others as for example eating disorder. Here, I will shortly report only on three interesting presentations regarding the use of 3D Avatars technology for psychotherapy.

*Avatar* is a software representation of a person as the person appears to others in a shared virtual universe, the avatar may or may not resemble an actual person. Avatars are mainly employed in computer games or computer animation. However, at the CyberTherapy conference, it was presented how this 3D technology could be used for therapeutic purposes. Two examples are described in the following.

Ferrer-Garcia et al. of the University of Barcelona (Spain) described the effectiveness of virtual environments and avatars to elicit emotional responses in patients with eating disorders. These persons usually show anxiety on seeing high-calorie food and in situations in which their body is displayed or in which they come into contact with other people. These three variables can be tested by the use of VR and Avatars, showing for example virtual environments as living-rooms, restaurant, swimming pools, with and without food or other peoples. The reaction of the patient can be measured and correlations to the shown situation can be established. The use of VR and Avatars allows an unlimited number of different scenarios.



*3D Avatar with freely definable sizes and some scenarios used with eaten disordered patients*

Jang et al. of the Severance Mental Health Hospital in Gyunggi-do (Korea) and Kim et al. of the Department of Biomedical Engineering at Hanyang University in Seoul (Korea) investigated the use of VR and avatars to patients suffering of schizophrenia.

Patients with such mental disorder show the tendency to avoid social interactions. The study was conducted in order to investigate whether an interaction with virtual characters (Avatars) could evoke patient's social anxiety and the relationship between patient's symptom severity and social anxiety traits. The Avatars were presented in 3D to the patient wearing a head mounted display (HMD). The avatars could express different emotions as for example happiness, sadness, anger, neutrality. The reactions of the patient to the different conditions could be measured. Additionally, it was analyzed the relationship between interpersonal distance and symptoms of schizophrenia according to the different emotional categories. In this case the virtual distance between the patient and the avatars with different expression was measured.



*Patient wearing a VR-HMD and two Avatars expressing different expressions: happiness and anger*

These were just two examples of the use of 3D avatars in the psychotherapy. This technology can be limitlessly exploited in other cases.

Additional information about the conference and the use of VR/AR in psychotherapy can be found at the web address of IMI: [www.interactivemediainstitute.com](http://www.interactivemediainstitute.com).

## Applications

### Three dimensional quantification of cellulite

3D laser scanning technology is used to characterize cellulite

#### Sources:

Lola Roming Kelly Smalls, "Development of quantitative models for the investigation of gynoid lipodystrophy (cellulite)", PhD Thesis, University of Cincinnati, USA  
Cyberware Newsletter, [www.cyberware.com](http://www.cyberware.com)

Total Contact Inc. (Germantown OH, USA), working with the Skin Science Institute of Children's Hospital Medical Center of Cincinnati (USA) and the University of Cincinnati's College of Pharmacy (USA), has implemented the use of Cyberware (Monterrey CA, USA) non-contact surface scanning system and TrueGage (N. Huntingdon PA, USA) analysis software to quantify cellulite.

Females in today's society hold an outwardly attractive physical appearance in high esteem. This leads many women to seek artificial, surgical, and cosmetic remedies for the "unsightly" ills that nature has mercilessly inflicted upon them. An area of increased cosmetic concern for women is the cottage cheese-like dimpling of the skin of the thighs, abdomen, and buttocks known as cellulite. Gynoid lipodystrophy, or cellulite, affects 85% of post-adolescent women and is of chief interest to the pharmaceutical and cosmetic industry.

The distinctive surface morphology is believed to result when subcutaneous adipose tissue protrudes into the lower reticular dermis, thereby creating irregularities at the surface.

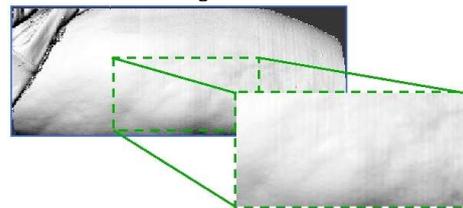
A novel, non-contact three-dimensional laser scanning system was employed to objectively characterize and quantify the three dimensional features of the skin surface.

The scanner was used to capture surface data of cellulite-affected thigh sites in females with varying degrees of cellulite, as well as subjects exhibiting non cellulite. Three dimensional (3D) skin surface data were captured using the Cyberware Rapid 3D Digitizer situated on a linear platform, with user defined platform speed and scanner resolution controlled by CyScan data acquisition software. The outer aspects of both thighs were scanned while subjects were seated on a level surface with knees bent at a 90° angle.

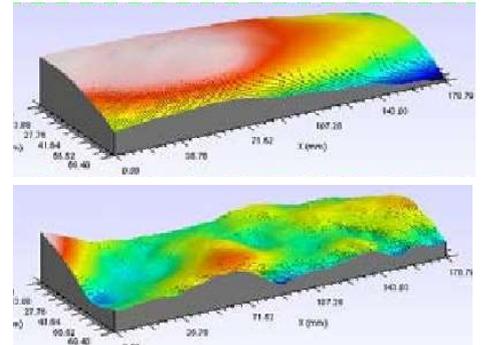


3D laser scanning system, scanning the thighs

The surface data were analyzed to quantify the skin surface morphology and determine specific roughness values. Customized TrueMap Software of TrueGage was used to remove features not associated with cellulite, including thigh curvature, noise, hair, varicose veins and surface anomalies, not removed during filtering. The surface roughness parameters were calculated for the region of interest.

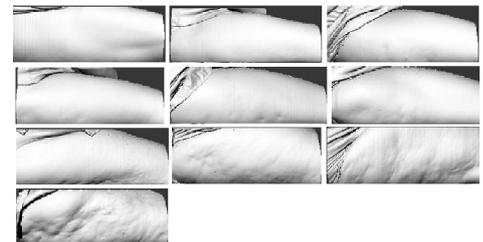


A subset of the 3D scan is cropped and analyzed



Two different 3D profiles: low grade cellulite (top) and high grade cellulite (bottom)

To establish an unbiased reference data, the 3D images of the scans were also evaluated visually by experts and naïve judges, arranging them according to a cellulite severity grade scale from 0 to 9.



3D scan images arranged with cellulite severity grades

The comparison of the roughness parameters extracted from the 3D scan data with the grades given by judges showed high correlations. Therefore the roughness parameters could be designated as efficient and correct quantitative measures of cellulite severity.

This demonstrated ability to quantify cellulite will aid in development of remedies for reducing it.

For more information, please contact Total Contact Inc., e-mail [info@totalcontact.com](mailto:info@totalcontact.com).

### The virtual girlfriend

Artificial Life's second version of the 3D mobile application V-girl™

#### Source:

Artificial Life, Hong-Kong, [www.artificial-life.com](http://www.artificial-life.com)



Snapshot of V-girl™

Hong Kong-based Artificial Life Inc. announced the release of version 2.0 of its flagship mobile game product V-girl™ - your virtual girlfriend.

V-girl is described as an interactive mobile movie, an evolving mobile sit-com and an innovative mobile dating play game all in one. Version 2.0 has many new interactive and innovative features such as: multiplayer contests, locked and secret scenes, interactive puzzles, real time based calendar events and game functions, and several interactive role play games within the game.



V-girl™ on a mobile phone and some snapshots

The new game version also features six virtual female characters for interaction with the players.

Many interactive features are included in the game for making it even more entertaining. In the second version, as example, Artificial Life has implemented, what they believe is the world's first interactive multi-player plastic surgery on a virtual person.

#### Artificial Life Inc.

Artificial Life, founded in Boston in 1994 and headquartered in Hong Kong, is a leading global provider of mobile games and applications. They also announced the upcoming release of its first massive multi player mobile game. The new game is based in its style and core functionality on the V-girl™ game series.

The game establishes a massive multi user mobile virtual community and is custom build for 3G-mobile phones. Players of the game can select a 3D virtual character for themselves and inhabit and live in a simulated virtual city. When navigating through the virtual city, users can contact and interact directly with other players in real time, have live real time chats with other human players or chatter bots, enter and explore virtual buildings, use interactive objects and cooperate with others to solve certain tasks or to avoid certain threats.

More information about V-girl can be found at the web address: [www.v-girl.com](http://www.v-girl.com).

#### ADVERTISEMENT

This place is to rent.

Put your advertisement here and reach customers interested in 3D human body digitization.

For more information send an e-mail to: [info@homometrica.ch](mailto:info@homometrica.ch).

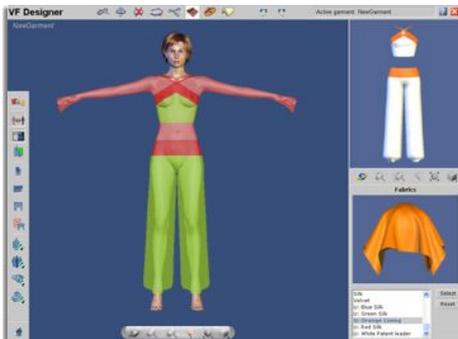
## Applications

### Virtual Fashion Works

A fashion game that lets you bring your creative fantasies to life

Sources:

Virtual Fashion, Spain, [www.virtual-fashion.com](http://www.virtual-fashion.com)  
TechExchange, USA, [www.techexchange.com](http://www.techexchange.com)



Snapshot of VF Works user interface

Virtual Fashion (Madrid, Spain) has launched the new version of *VF Works*, a fashion design application capable of recreating the fashion design production process in an entirely digital environment. Virtual Fashion is division of Reyes Infográfica S.L., a 3D software company well known internationally for its 3D cloth simulation plug-in *ClothReyes*.

*VF Works* allows anyone to believably create highly detailed and accurate clothing. The software offers, via a simple and intuitive set of 3D tools, the opportunity to preview, on a model and in real time, the garments that a user designs.



Three steps of the 3D design process

Moreover, the materials and fabrics used in the design will act exactly as they would if they were real. Virtual Fashion system has a fabrics database which provides an exact and precise definition of their dynamic and visual properties. The Virtual Fashion cloth engine simulation is an advanced version of the 3D fabric simulator *ClothReyes*. This simulator allows you to give life to an enormous variety of textures in a hyper-realistic way. Not only it is possible to see how garments will adjust to a human body, but also it is possible to see how they will react to movement in true to life fashion.

Additionally, with *VF Works* users can add personality and attitude to their models by customizing different poses, facial gestures, and makeup.



Female model without and with customized makeup

The designer will also be able to create the perfect scene with backdrops, decorations and lighting effects, and choose the best camera angles and produce his/her own runway or produce high quality photographs of designs.



Some examples of models created with VF Works

Additional information about Virtual Fashion Works can be found at the web address:

[www.virtual-fashion.com](http://www.virtual-fashion.com).

### Ma cabine d'essayage

La Redoute France launches a 3D virtual dressing room

Source:

Virtual Business Solutions & Systems, France, [www.vb2s.com](http://www.vb2s.com)



Snapshot of the virtual dressing room of La Redoute

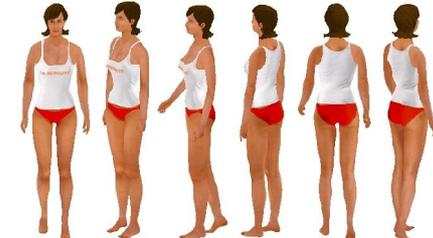
Virtual Business Solutions & Systems (Roubaix, France), a computer engineering and maintenance company specialized in software development based on 3D real-time technology, in collaboration with the company Wygwan (Villeneuve d'Ascq, France) specialized in the development of web solutions, has realized a new e-commerce platform using 3D avatars for the real-time virtual-try-on of cloth items. With this new product, specially developed for La Redoute (an European leader in the home shopping), a new company enters in the market of virtual-try-on solutions for e-commerce.

The new virtual dressing room application is based on the *Subdo* technology of Virtual Business Solutions & Systems (VB2S), which allows the development of real-time 3D interactive applications of high level.

The web application developed by VB2S and Wygwan should provoke an additional interest from the point of view of the customer accessing the on-line shopping web page of La Redoute. The customer can in fact create his/her personal mannequin by parameterizing his/her avatar (height, weight, waist, etc.). All these operations succeed in real-time and the results can be analyzed in 3D. Details of the face and hair can also be selected.



3D models with different sizes and details of haircuts



The 3D model can be freely rotated around 360°

Once the personalized avatar is created, the customer can access the on-line shopping pages of the La Redoute web site. Different cloth items can be virtually tried on the personalized mannequin. Full 360° views of the virtually dressed mannequin can be analyzed in real-time.



Virtual-try-on of cloth items with 360° views

Using this technology, the customer is an actor and not a spectator during the on-line shopping experience. VB2S and La Redoute believe this new on-line shopping functionality will increase the sales volume through Internet.

More information about this product can be found at the web address: [www.vb2s.com](http://www.vb2s.com).

La Redoute virtual dressing room can be accessed at: [mannequin.redoute.fr](http://mannequin.redoute.fr).

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