SIMULATING THE FITTING OF A PATTERN USING THE ASSYST ® 3D VIDYA PROGRAM

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Abstract: This paper aims to present the evolution of pattern construction in the textile industry starting from the manual construction of the basic pattern and ending with the current 3D method that is offered by most computer-aided design softwares. In this paper, the authors have chosen to present the way to simulate the fitting of a ladies' tunic and therefore to focus on the 3D Vidya design module, which is included in the computer-aided pattern making program Assyst. The computer-aided design program Assyst is in the top 3 of the kind programs used on the European market, the latest development being the 3D Vidya design module. Vidya's 3D module is now even more powerful, with incredibly realistic shadows and results thanks to the new V-RAY rendering system and PathTracer technology. With Vidya, one can instantly create avatars of the target group or a model in any size - all with lifelike sizes, shapes and realistic measurement increase or decrease across the full size range, which can be implemented in the shortest possible time. All digital accessories for simulation such as zippers, buttons, snaps have the characteristics of real accessories and behave as such, so in a simulation you can visualize exactly how a zipper behaves while in use.

Key words: Assyst Vidya, simulation, apparel pattern making, 3D design.

1. INTRODUCTION

The basic pattern is made according the normal conformation of the body, so any modification can be made for that product with more ease. The pattern is built based on measurements taken directly on the body, according to individual orders, but it is recommended that these measurements be proportional (calculated), as this is necessary to form a clearer picture of the body's conformation [1]. Manual making of apparel patterns has been replaced in the apparel industry almost entirely by modern and efficient computer-aided design systems. Work patterns and templates can be digitally emailed across the globe so they can be immediately accessed and used [2]. In the industrial practice of pattern making, existing basic patterns are predominantly used and modified for achieving new patterns. By means of a CAD system the work is significantly easier and the execution time is reduced.

Thus, either manually drawn patterns are used that are digitized, or the basic patterns already existing in the database. The entire outline of the pattern can be modified, deleted or added, lines and points can be changed, whole pieces can be moved [3].

2. GENERAL INFORMATION

The ease of working with and the multitude of tools, commands and functions that serve drawing, modeling and styling, have made graphic programs increasingly used and beloved in the textile industry [4], [5], [6].

With Vidya, work orders or complete digital samples or swatches can be launched very quickly, they are always based on the desired material and real colors and on the body dimensions of the target group. In this paper, the authors have chosen to present the way of simulating the fitting of the women's tunic [7], [8].

2.1. Model fitting simulation in Vidya

So that the pattern can be opened for simulation in Vidya, the following steps must be taken: we select the right avatar, in the case of the female avatar, then we select background colors, and finally we can remove the default clothing object, as it appears in **Fig. 1**.
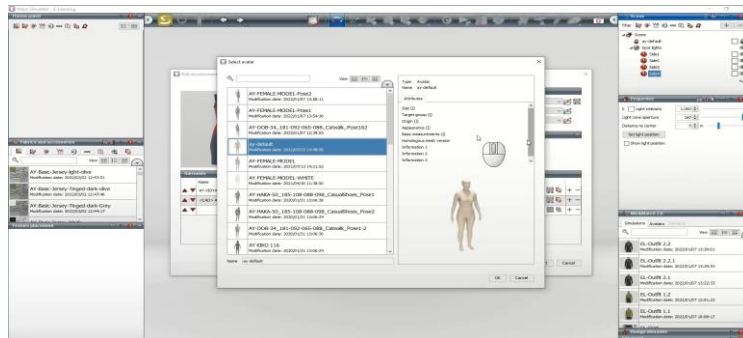
Fig. 1: Selecting the right avatar according to the desired imported model

The avatar is basically the body, which the fitting of the clothing item is simulated on. Workspace parameters form surrounding settings like background color, light setup, removing the default clothing item. The start of the simulation is presented in, **Fig. 2**.


Fig. 2: Start of the simularion

2.2. Initial positioning of the pattern pieces

To position the pattern pieces, the following steps are required: activate the "hull" surface mode.

The pattern pieces are to be placed one by one, by clicking the left mouse button and with "drag & drop", adjusting the position of the pieces can be done later, after positioning thesee for the back also, return to the rotation mode by activating the button from the main upper menu, **Fig. 3**.
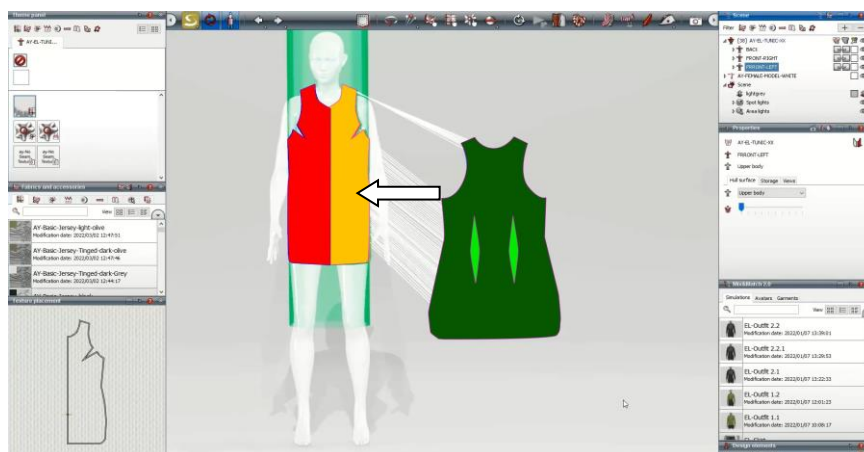
Fig. 3: Placing the pattern pieces

The appearance of the avatar after positioning the landmarks and selecting the sewing simulation function, is presented in **Fig. 4**.
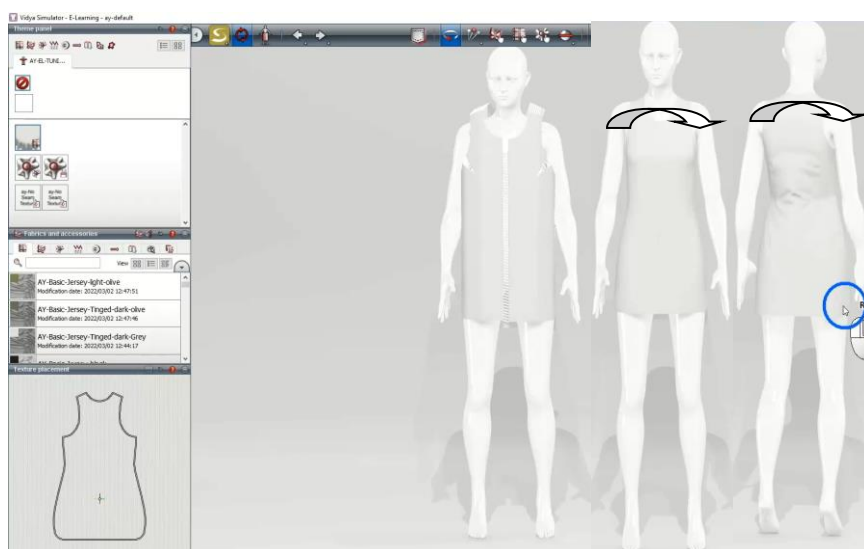
Fig. 4: Avatar appearance after the sewing simulation

Thus, many established companies have opted for the 3D Vidya module, among them are worth to be mentioned: Gerry Weber, Gore, Marc O'Polo, Hessnatur, Vaude, Giesswein, Strauss, Escada, Esprit and many others [7], [8].

3. CONCLUSIONS

The efficiency of the 3D Vidya module can be seen and tracked closely within the design and CAD department of a company, based on the collection sketches, the technical documentation and design of the product can be directly drawn. The Vidya module by choosing the material or materials in the case of a combination and specifying the composition that includes the rendering by the program of its specific behaviors, allows to carry out an accurate fitting simulation. The chosen avatar corresponds to the desired measurements, so the changes that are considered necessary after the fitting are as real as possible. In the clothing industry characterized lately by globalization where the production partners are far away, it is a major advantage to reduce the time and costs invested in making the initial sample.

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