COMPANY
CD PROJEKT RED

LOCATION
Warszawa, Poland

SOFTWARE
Autodesk 3ds Max, Autodesk MotionBuilder 3D

The Witcher 3: Wild Hunt – behind the scenes

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>
> **— Stan Just**
>   Producer

Graphics of The Witcher 3: Wild Hunt - Hearts of Stone made by CD Projekt RED

"The Witcher 3: Wild Hunt" super-production game was produced by CD PROJEKT RED with the support of Autodesk solutions.
The software was delivered by PCC Polska, Autodesk Gold Partner.

The Witcher 3: Wild Hunt is a role playing game which has been developed during over 3 years with the main objective to present to the players the story of Geralt of Rivia, set in a tenebrous world known from the books by the Polish writer Andrzej Sapkowski.

"Golden Joysticks" to the Witcher

The team developing the game included over 250 specialists from all over the world, and the game has received over 200 awards before its premiere. Now this number increased to 250 – the collection grew by, among others, 4 Golden Joysticks, considered "gaming industry Oscars", awarded to the Witcher for, among others, the Best Visual Design, Best Storytelling and Best Gaming Moment.
The Witcher 3: Wild Hunt was also awarded the Golden Joystick as "Ultimate Game of the Year", and its developer CD PROJEKT RED also picked Studio of the Year. Within two weeks of the game's premiere 4 million copies of The Witcher 3 were sold and the costs of development were recovered in full already on the first day of sales.

"When developing the Witcher we wanted to show the players a really living world that is beautiful and visually rich, and then put a fascinating story in it that the players will remember for many years to come" – says Konrad Tomaszkiewicz, Game Director.

Development of the game would not have been possible without the tools supporting the work of the designers.

"The key factor and challenge when developing games is nearly always the time. The more we have, the more we can achieve. I think the tools we are using extensively 'make more' time, however, on the artistic side the most important is the user of these tools. In other words, the better tools, the more time, and the more time and the better skills of the artist, the better the final result" – argues Konrad Tomaszkiewicz.

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How do you create realistic garments?

Autodesk 3ds Max software allows for quick creation, customisation, rendering and combined development of 3D models and animations. The functions available in this tool allowed the CD PROJEKT RED's designers to create models, renderings and 3D animations. Some of the most demanding graphic elements are the subtle details forcing the authors to focus on minute items the seasoned game player is able to observe and appreciate the amount of work spent on their refinement. Such nuances include, for example, the outfits worn by the characters.

"We commence the work on modelling an outfit with creating Mid-Poly model in Autodesk 3ds Max. It consists of building the attire from simple solid blocks defining the silhouette. Sizeable elements made of fabric, such as shirts, dresses or trousers are created in simplified form. All elements made from rigid materials, such as armours, buckles, belts, bags, are modelled down to the smallest detail. A model created in this way then goes into ZBrush, where it is sculpted until we get a ready high polygon mesh. It then goes back to the Autodesk 3ds Max application where we create the low polygon mesh and do the UV mapping" - says Paweł Mielniczuk, Character Art Director.

The role of modelling tools is also clearly noticeable when creating the characters.

"In the Autodesk 3ds Max application we are creating skeletons of the characters and pinup the character model onto the bone system in a process called weighting. We have saved plenty of time with task automation using the MAXScript scripts" - adds Paweł Mielniczuk.

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From The Witcher 2 to the Wild Hunt

The software tools used by game developers should be viewed as one of indispensable elements of the complete production system, without which the final effect – despite the idea, efforts and talent – would not be possible. This is clearly visible when comparing the toolset used to produce the latest "Wild Hunt" with the one used in the previous release – The Witcher 2.

"Our tooling is evolving with our vision of the games and ideas how they should be developed. A change of concepts concerning the size of the world and which of its areas may be explored has significantly influenced the development of technologies we have used when making The Witcher 3" - says Krzysztof Krzyścin, Technical Art Director.

The biggest changes were in the scale and ways in which the terrain is created, displayed and managed. In the second part of the game the players could move around hundreds of square meters. In the "Wild Hunt" individual levels include tens of thousands of square kilometres. To create them the artists are using generators that can simulate mountain formation, sedimentation of deposits or automatic overpainting of areas that should be covered in snow. An additional "playable level", unavailable in previous parts of the game, is water – not only its surface, when we are travelling in a boat, but also when we are exploring the underwater world.

"Such a huge world requires tremendous number of objects – not only props, but also characters, animals and plants. To populate it (while controlling the memory management of the device the game is running on) we had to develop an entirely new loading mechanism and optimise many other components. The new plants management system had to cope with huge volumes of data, a best example of it are the trees – numbering hundreds of thousands, many times more than in The Witcher 2! We have achieved more realism using the new renderer and physically based rendering. Every surface in the game, whether it is metal, wood or skin texture, reflects the actual properties of the real objects. In addition, the artists can add multitude of details (e.g. a specific thread weaving pattern in a fabric, visible only with huge zoom in) making the game look even more like the real world" - adds Krzysztof Krzyścin.

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The Witcher climate in animatics

Besides creation of the characters the player can control, the backgrounds, other heroes and objects, an important role, building the narration climate in the game is played by in-game cinematics.

"When working on the new Witcher we have produced around 250 video sequences totalling around 150 minutes (from several seconds to over a minute per sequence). What's more, they were fully localised into 7 languages. Autodesk MotionBuilder 3D is our basic tool in the Cinematics department, while Story Tool allows convenient creation of complicated movie sequences. And it is the very tool we use at the preproduction stage to create 'animatics' and then the final in-game movies. All movie sequences were produced using the Autodesk MotionBuilder 3D program supported with our

plug-ins (working with motion capture material, animation of characters and faces, Story mode editing, cleaning)" - says Jakub Ben, Cinematic Artist.

The movie sequences in this part of the game are much more advanced than in previous parts, mainly due to higher rendering capabilities.

"Now we are able to display a bigger number of more detailed characters, operate with higher number of bones, use advanced physics and achieve higher realism using new shaders and other technology solutions. In difference to The Witcher 2, now we are using a much bigger number of our own plug-ins and work-accelerating scripts, allowing us, for example, to have a live preview of the game in the editor" - adds Jakub Ben.

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