

## Virtual Prototyping and Mockup Solution for Automotive, Aerospace, Lighting, Architecture, Hi-tech and Energy Companies to Design Light Products using Virtual Reality and Human Vision Simulation



Jacques Delacour  
Founder & Chief Executive Officer

OPTIS  
[www.optis-world.com](http://www.optis-world.com)

Contact:  
Marine Tixier  
+33 494 086 690  
[mtixier@optis-world.com](mailto:mtixier@optis-world.com)

Interview conducted by:  
Lynn Fosse, Senior Editor  
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**CEOCFO: Mr. Delacour, what is the vision for OPTIS?**

**Mr. Delacour:** The initial vision was to use optical and physics based simulation to answer industrial needs. My background is in optical engineering, the development of optical systems like lens, telescopes or microscopes. My vision was that everything you see is light and light is governed by the laws of optics. Therefore, I used my knowledge to solve lighting and photonics topics, and because everything you see is light, it is not just lighting systems, but everything you see, such as reflections inside a car. The way we handle this, is a focus on light, and what we do with our software is to model and simulate this in every industry.

**CEOCFO: How do you do this?**

**Mr. Delacour:** We develop a CAE (Computer-Aided Engineering) software, SPEOS, that starts from any kind of geometry, which could be a car, headlamp or a luminaire. Then we simulate the behavior of the system, so how light is propagated inside it, and how you will perceive at the end, the system under different environments.

**CEOCFO: Who and how are people using what you have created? Would you give us a couple of examples; something basic and something a bit more intricate to understand the range of what can be accomplished with your offering?**

**Mr. Delacour:** For example, we have people who make headlamps or dashboards for cars. They start with the geometry, as this is a 3D system. Then they select a light source from our library and they create different types of shapes, add all of the optical properties, such as a mirror, a glass or a plastic. After that they launch the simulation like they would have taken a picture. The usage, in this case, they can measure the performance of the headlamp, which is increasingly important because headlamps are becoming intelligent. They are trying to eliminate the danger, so that it is more powerful. They are also able to visualize when the headlamp or the tail lamps are switched on, because people like things to be beautiful. Our software helps to do this and to reach a level of unequaled realism. For example, you want to put

more or less light sources inside your product, and people want your product to be perfectly uniform. Our software is able to generate this image and show you on the computer how it will look, precisely. This is one type of usage for our software. Another usage is when you design the interior of the car, you have to insert a dashboard, to place a GPS and displays. Around you there will be a great number of windows, such as the windshield and the side windows, so the software is used to simulate the way we perceive the exterior and see if you will have some reflection inside of the car. This enables users of our software to evaluate the comfort and the glare, or even the discomfort of the car.

**CEO CFO: *If you look at most apps on different computers there are variations in how it looks depending on the computer make and model and settings. There may be different coloring or sizing. How are you able to simulate a genuine light experience while taking into account the actual computer that the image is displayed on? How is that built into the software?***

**Mr. Delacour:** We have a physics approach, and that means what we handle is not the traditional photorealistic approach, because it is first a spectral approach. We cover all the wavelengths that can be found in real life under the sun or in artificial light. The fact is that people view the results on a display or in a virtual reality center, therefore, we take into account the performance of the display, as well as the performance and characteristics and factors of the virtual reality center, so that the image we display will show how the product will really be perceived. In fact, what we do in-between is we have a human vision model, and this human vision model helps to calibrate and to display as if it were in the real world. For example, under the sun you may have glare from a reflection, so we are modeling the human vision perception, and we display it the same way.

**CEO CFO: *Is it one solution that you offer and people would choose what they want to use or are there a variety of solutions? Would you tell us about your product?***

**Mr. Delacour:** The product we offer is a software and it is an off the shelf software mainly. However, you have several configurations depending on what kind of product you want to design. We have some solutions for Exterior Lighting, some for Interior Lighting, which works for transportation and architecture. We also have a solution for Virtual Reality, and sometimes we have to adapt and customize it based on specific requirements.

**"Virtual reality becomes realistic when you excite several senses at the same time. For example, visual is important, but if you want to be highly realistic, acoustics is also important and you must combine both senses together to bring reality. With our HIM software, what is important is that we have connected sound to the virtual experience." - Jacques Delacour**

**CEO CFO: *Would you tell us about your customer range? You have many global customers. What is your reach today?***

**Mr. Delacour:** Over 50% of our business is coming from the automotive industry, because our solution can really replace physical prototypes and physical mockups which is very costly to do in this industry. Therefore, the use of the software is not much different than traditional rendering software. The intent of the software is not just to create a pretty picture, so we do not try to embellish the image. We are simply trying to replace the physical prototypes. That means if the result at the end is not beautiful, then your product at the end will not be beautiful. Therefore, you have to continue working and changing materials and colors until it is beautiful or acceptable. The software replaces physical prototypes and we allow users to make decisions based on the virtual world. That is the difference from traditional software. This need is in any industry, transport of course and also in high-tech equipment, lighting, architecture, jewelry... which is why we have 10 subsidiaries worldwide to be close to our customers.

**CEO CFO: *What is the competitive landscape? Are there any companies able to do what OPTIS can?***

**Mr. Delacour:** We have different software products, and we have several competitors, but we have no competitor that does everything we do. That is the main difference. We have competition in photometry, competition in rendering or simulators, but no competitor is covering what we cover as a total offering to our users. And we are very unique in reproducing lit appearance and human vision. In addition, we are the only software in which you can rely on to make decisions in the virtual world. And this comes from our physics approach. That is something very unique to OPTIS.

**CEO CFO: *Are people in the industry that should know about OPTIS, aware of your products and presence? Are you well known in the industry or is there still some education to do?***

**Mr. Delacour:** We come from the physics world and we now address simulators and virtual reality. We are a French company, but we developed a great deal of business outside, as we sell 95% of our software to companies outside of

France. Therefore, our solution is sold worldwide. However, we are still a small company with 250 people. We are not well enough known in this area, even if we are a major player in optical simulation and rendering.

**CEOFCO: *What is your plan to do that?***

**Mr. Delacour:** First of all, as I said, we address virtual prototyping. The results we have are very realistic, so it is something that is very important. We have good partnerships with some companies such as NVIDIA, Barco, Dassault systemes. We also have great customers, both OEM automotive manufacturers and suppliers are using our solutions. It is the same in electronics. We try to communicate on typical innovations that our customers are doing thanks to our software. We address innovation and really work with our customers as partners. Sometimes they are ready to publicly communicate their partnership with us, so that is something that we push, which enables us to be known in this domain.

**CEOFCO: *What surprises you that we are able to do today with technology that perhaps we could not do 5 or 10 years ago?***

**Mr. Delacour:** We work on high performance computing, and our software can provide very fast simulation results right now, which is very new. People are frequently using results and simulation, so simulation becomes more and more prevalent, and we can address many different cases. Everything is moving faster and faster, so the request for simulation is becoming stronger. This is because the request for innovation is growing faster, and I think that is a good thing. I personally believe that people want to better understand the world and the way it behaves, and simulation can help this. That is the first thing. The second thing is that virtual reality is moving fast, but the problem is that solutions addressing virtual reality need realism. And physics brings realism, and if you want to make decisions, our solution can help. What people are starting to understand is that you can really replace the real world by virtual experience. It is interesting to see how fast things are going, and the fact that things are going faster makes people understand better, because of the principle of action and reaction: when you interact with something you see the results and the impact of it. Therefore, that is something that you can understand. That is also important in the way people like to create new things: by interacting.

**CEOFCO: *Would you tell us about the HIM2017 that you recently released or the new version?***

**Mr. Delacour:** HIM is the new version of our virtual reality software. Virtual reality becomes realistic when you excite several senses at the same time. For example, visual is important, but if you want to be highly realistic, acoustics is also important and you must combine both senses together to bring reality. With our HIM software, what is important is that we have connected sound to the virtual experience. We attended GPU Tech the NVIDIA Tech Conference last month, and we were the first editor to use their acoustic capabilities on the graphics card and to simultaneously experience visual and acoustics effects. It brings a great deal of realism to the experience. This news is very important in the virtual reality world.

**CEOFCO: *Put it all together for our readers. Why pay attention to OPTIS today?***

**Mr. Delacour:** Innovation is something we strive for and built into our software to help people innovate better, safer and faster. That is what is motivating our team. It is a very interesting phase. We welcome more people onboard; we have hired more people with this idea of innovation at the forefront. It is a very interesting human experience inside of the team. I really like the way our customers behave with OPTIS. It is really a relationship built on trust. It is also a long-term relationship as we have people using our solutions for 20 years. We always consider our customers, and we want them to win and innovate better everyday.

