



## REAL TIME RAY TRACING OFFLINE QUALITY – REAL TIME SPEED

### THE NEW PV-4D PBRT ENGINE FEATURES

- Production quality rendering
- From minutes to milliseconds
- All CPU based – no need for special hardware
- No limits in texture or geometry size
- State-of-the-art geometry handling (compiler, traversal, intersection)
- Full HDR pipeline
- HQ texture filtering
- HQ anti-aliasing

#### Fraunhofer-Institut für Techno- und Wirtschaftsmathematik ITWM

Fraunhofer-Platz 1  
67663 Kaiserslautern  
Germany

#### Contact

Dr. Carsten Lojewski  
Phone +49 631 31600-4236  
carsten.lojewski@itwm.fraunhofer.de

Dr. Franz-Josef Pfreundt  
Phone +49 631 31600-4459  
pfreundt@itwm.fraunhofer.de

[www.itwm.fraunhofer.de](http://www.itwm.fraunhofer.de)  
[www.pv-4d.com](http://www.pv-4d.com)



## HIGH QUALITY CAD VISUALIZATION

- ~ 25 million triangles
- Resolution: 2800 × 1050
- Full ray differentials
- HQ texture and normalmap filtering
- Un-compressed textures (up to 4 k × 4 k)
- 16 × anti-aliasing
- Mitchell-netravali-filter reconstruction
- > 10 fps on average on 32 Sandy Bridge cores

## KEYFRAME ANIMATION (DYN. FAIRY WITH SHADOWS)

- ~ 170 000 triangles (< 5 ms rebuild)
- Resolution: 2800 × 1050
- Full ray differentials
- HQ texture and normalmap filtering
- Un-compressed textures (up to 2 k × 2 k)
- 8 × anti-aliasing
- Cone-filter reconstruction
- > 60 fps on average