

Title (en)  
INVERSE TEXTURE MAPPING 3D GRAPHICS SYSTEM

Title (de)  
TEXTUR-RÜCKABBILDUNGS-3D-GRAPHIKSYSTEM

Title (fr)  
SYSTEME GRAPHIQUE EN 3D AVEC MAPPAGE DE TEXTURE INVERSE

Publication  
**EP 1766584 A2 20070328 (EN)**

Application  
**EP 05749079 A 20050609**

Priority  
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Abstract (en)  
[origin: WO2005124693A2] An inverse texture mapping 3D graphics processor maps a 3D model (WO) onto a screen space (SSP). A texture memory (TM) stores texel intensities  $TI(ug,vg)$  of texture space grid positions  $(ug,vg)$ . A plurality of screen space rasterizers (SRAS<sub>j</sub>) determines pixel grid positions  $(xgi,ygi)$  within different screen space polygons (SGP) at a plurality of corresponding different display instants  $(tj)$  during a same temporal interval  $(Tf)$  between sample instants of geometric data of the 3D model (WO). The screen space polygons (SGP) have different positions in the screen space (SSP) dependent on motion information of the 3D model (WO). A plurality of corresponding mappers (MAP<sub>j</sub>) map the pixel grid positions  $(xgi,ygi)$  of the screen space polygons (SGP) at the different display instants  $(tj)$  to texture space positions  $(uj,vj)$ . A texture space resampler (TSR) determines texel intensities  $(PI(uj,vj))$  at the texture space positions  $(uj,vj)$  from the texel grid intensities  $(TI(ug,vg))$  of the texture space grid positions  $(ug,vg)$  stored in the texture memory (TM). A texture cache (TC) temporarily stores, for every texture space polygon (TGP), the texel intensities  $TI(ug,vg)$  required by the texture space resampler (TSR) during the temporal interval  $(Tf)$  for all the screen space polygons (SGP) which are associated with a same texture space polygon (TGP). A plurality of corresponding pixel shaders (PS<sub>j</sub>) determine, at said different display instants  $(tj)$ , pixel intensities  $(PSI(xgj,ygj))$  from the texel intensities  $(PI(uj,vj))$ .

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