Title: TECHNIQUES AND WORKFLOWS FOR COMPUTER GRAPHICS ANIMATION SYSTEM

Abstract: The disclosed implementations describe techniques and workflows for a computer graphics (CG) animation system. In some implementations, systems and methods are disclosed for representing scene composition and performing underlying computations within a unified generalized expression graph with cycles. Disclosed are natural mechanisms for level-of-detail control, adaptive caching, minimal re-compute, lazy evaluation, predictive computation and progressive refinement. The disclosed implementations provide real-time guarantees for minimum graphics frame rates and support automatic tradeoffs between rendering quality, accuracy and speed. The disclosed implementations also support new workflow paradigms, including layered animation and motion-path manipulation of articulated bodies.
## INTERNATIONAL SEARCH REPORT

**International application No**

PCT/US06/14713

### A. CLASSIFICATION OF SUBJECT MATTER

- **IPC**  
  - G06T 1/00(2006.01)

- **USPC**  
  - 345/418-428,470-475

According to International Patent Classification (IPC) or to both national classification and IPC.

### B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

- U.S. 345/418-428, 470-475

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched.

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used).

### C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No</th>
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</table>

Further documents are listed in the continuation of Box C. See patent family annex.

### Date of the actual completion of the international search

12 February 2008 (12.02.2008)

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Form PCT/ISA/210 (second sheet) (July 1998)

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