EGMM 2004 - 7th Eurographics Workshop on Multimedia
Nanjing University, China, 27-28 October 2004

Trends and Standards for 3D graphics for Handsets

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Abstract

Today, the evolution of embedded technologies is transforming our mobile phones into more advanced featured multimedia handsets. First, appeared the MMS and colored screens, then audio and JPEG viewing. Video is coming too in high end handsets. Also, screen size, resolution and color depth always increase, offering more possibilities for entertainment. A new trend is thus growing very fast: to transform our handsets into gaming platform offering 3D graphics possibility. That's why, in the embedded world, where the power consummation is the most critical issue, hardware acceleration is becoming a necessity. Such as the in the PC world, there is a need for standardize the APIs for evident reason of compatibility between the silicon providers and the game developers. Today, the Khronos group[1], one of the most active groups, is defining the new worldwide platform-independent standard for multimedia and graphics API interface for hardware acceleration for the handset word such as OpenGL-ES, OpenVG… Also, the Java community has released 'Mobile 3D graphics API' (JSR184) [2], which offers high level graphics APIs and thus minimizes 3d games size for OTA downloading.
All these new standards open a new wild range of activities in graphics for the handsets world, in particular for game developers, library implementers, and graphics chips provider such as Nvidia and IMG with their PowerVR technology [3].

References

[1] Khronos group's web site: www.khronos.org
[2] JSR184's specification : http://www.jcp.org/aboutJava/communityprocess/review/jsr184/
[3] Imagination Technologies's web site : www.imgtec.com/

Resume'

Christophe Quarre' got a double MS degree in 2002 in Physics and Microelectronics at University I of Aix-Marseille (France) and in Computer Science at "*Institut Supérieur de Micro-Electronique Appliquée*), Marseille. He joined STM Milan in early 2003 in the Advanced System Technology group to work on a project for 3D graphics pipeline low power for mobile based on OpenGL-ES, where he worked on 2D homogeneous rasterizer algorithm. In end 2003, he moved in new lab in Shanghai to lead a team on this project.