OpenGL: A Short History

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Prehistory

- 1977 GKS (Graphical Kernel System) 3D Graphics System proposed as ISO standard in Europe
- 1989 PHIGS (Programmer's Hierarchical Interactive Graphics System) introduced as ANSI/ISO standard. Scene Graph introduced. In order to light a 3D scene PHIGS+ was introduced. This was officially removed from X Windows with X11R6.
- 1989 PEX (X Windows Extension to PHIGS) introduced as a network transparent protocol. Why did PEX lose out? It was a protocol and not an API.

Prehistory

- 1989 Kurt Akeley introduces IRIS GL (Integrated Raster Imaging System Graphics Library) at SGI. Although bound to a windows system, it was intended to be device-independent
- Pressure by ISV's forced SGI to develop OpenGL with a view to avoiding proprietary window systems and graphics hardware (even SGI's)
- Thus develop a uniform open standard, not selective like PEX

The Crucial Decade

- 1990 OpenGL developed at SGI. SGI and MS begin stormy collaboration
- 1992 OpenGL 1.0 is released, open war with PEX 5.1 at SIGGRAPH.
- 1992 Architectural Review Board (ARB) for OpenGL founded as a vendor consortium. System was open in that anyone could develop features, but they were subject to conformance test by the ARB
- 1994 A slow version of OpenGL appears on Windows NT.
- 1995 Commpetition OpenGL with DirectX in video games market. John Carmack abandons Direct3D ship. API was begins
- 1995 OpenGL 1.1 and GLX appear
- 1996 OpenGL spec goes public

The Crucial Decade

- 1997 Agreement with Microsoft leads to OpenGL on PC's (and Windows). Subsequent split between SGI and Microsoft
- 1998 OpenGL 1.2 released (Vertex Arrays, texturing advances)
- 1999 Apple becomes OpenGL licensee. NVIDIA produces their GeForce 256 GPU, thus moving graphics operations to the GPU

The Fahrenheit Agreement

SGI-Microsoft: A marriage made in hell

- Idea: OpenGL on Pc
- Microsoft wanted control of their platform
- Agreement failed–no new standard
- OpenGL still exists on all Windows Platforms
- SGI learned about MS-style business
- Microsoft learned a lot about graphics
- “Kurt got mean, stopped dealing with Microsoft”(Pat Hanrahan)

Subsequent Developments

- 2001 OpenGL 1.3
- 2002 OpenGL ES for hand-held devices, ultimately gaming on mobile devicesA
- 2004 OpenGL 2.0 released with new releases and extension promised annuall y, although stagnation was beginning to set in
- 2004 Shaders introduced into OpenGL (GLSL). Microsoft releases Direct3D with Windows Vista
- 2006 Khronos Group takes over management
- 2007 Longs Peak and Mt. Evans appear as API's to compete with Direct3D, using rendering with shaders and buffer objects
- 2008 OpenGL 3.0 is released, deprecation of features like Immediate Mode caused protest. But Direct3D lost, because of driver problems in new versions of Windows

Subsequent Developments

- 2008 OpenGL 3.1, introducing Geometry Shaders
- 2009 OpenGL 4.0 and Tesselation (surface control)