

OPENGL

Fernando Ellis - Andrew Mandula - Brendan Whitfield

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Business and Legal Aspects of FOSS - Enterprise Company Profile

WHAT IS IT?

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"OpenGL is the premier environment for developing portable, interactive 2D and 3D graphics applications" - **opengl.org**

"Open specifications and associated conformance tests that enable hardware and software communities to effectively communicate with each other" - **Khronos Group**

Controlled maintained by

K H R  N O S
G R O U P

The Khronos Group

- Non-Profit, Member-Funded Consortium
- Founded by
 - 3Dlabs
 - ATI
 - Discreet
 - Evans Sutherland
 - Intel
 - NVIDIA
 - Silicon Graphics (SGI)
 - Sun Microsystem

WHAT IS IT?

Khronos Group is an **assemblage of corporations** seeking a common goal (the OpenGL standard)



Member Summary

- **84** Contributors
Participants with voting rights
- **15** Academic Members
Participants with NO voting rights
- **12** Promoters
Functions as Board of Directors

HISTORY OF OPENGL

Silicon Graphics Inc. (SGI) was the **exclusive owner** of IrisGL.
Several Companies were brought together to form the **OpenGL
Architecture Review Board (ARB)**.

First release was in January 1992.
In 2006, control passed from the **OpenGL ARB** to the **Khronos Group**.
Most recent stable version is 4.5, released **August 2014**.

Original IrisGL API **didn't work** on multiple hardware platforms.

OpenGL software provided support **beyond hardware limitations** through Device Driver Standardization.

Direct3D by Microsoft (released 1995) was its **biggest competitor**.
The **Fahrenheit project** in 1999 was a failed attempt at unification.

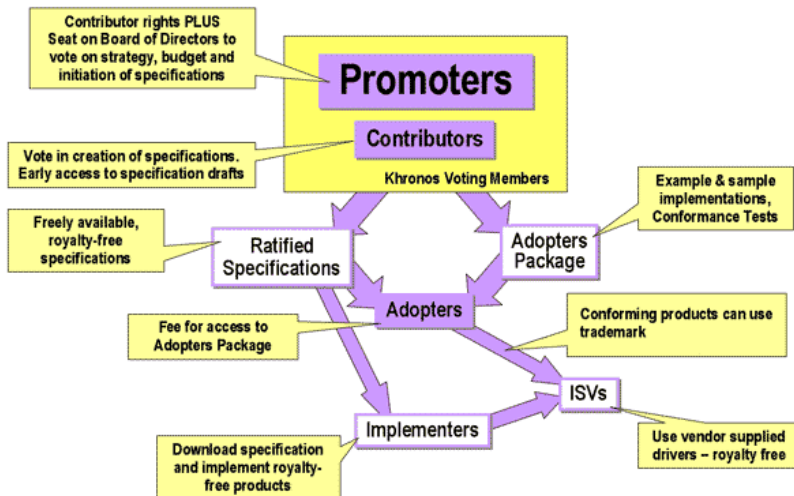
MAKING OPENGL

Members of the Khronos Group design, document, and create conformance tests for the OpenGL standard.

Copies of the standard, as well as header files, are freely available to the public.

All 825 Pages of it

Levels of Khronos Membership Enabling many degrees of participation



Only Contributors and Promoters have rights to vote on new features of the standard (96 in total).

During development, all information regarding the standard is kept confidential.

Because of patent trolls

LEGAL AGREEMENTS - #IAMNOTALAWYER

Based on a "reciprocal license"

"all Khronos members reciprocally agree not to assert IP rights for technology in a Khronos specification against any other Khronos member that is implementing that specification." - **Khronos IP Framework**

Prevents IP disputes, and provides protection for Members contributing to the standard.

[View the full agreement here](#)

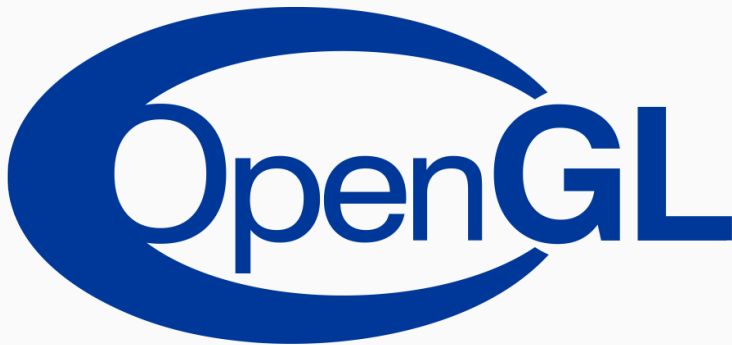
Non-members are not explicitly protected, but are encouraged to use the standard, royalty-free, so long as they do not file lawsuits.

Non-members can put this agreement into writing by becoming a member

Patents are also reciprocally licensed, royalty-free

Member companies can exclude patents from the license using an "IP Disclosure Certificate"

This is rarely used



The trademark can only be used if the implementation passes the conformance tests.

Filed a Form-990 for non-profit status

Failed to file for 3 consecutive years. Last filed in 2010:

Total Revenue: **\$1,441,665**

Total Expenses: **\$1,366,213**

COMMUNITY

There is **NO Source Code** Repository.
(But you can get some **header files** from them)

OpenGL is not source code, but a **Open Specification**.

There is documentation for the [spec](#).

Major OpenGL Announcements are made at SIGGRAPH and/or GDC.

Anyone can join the Khronos Group

There is a fee from \$ 1,000 - 60,000

But it is waived for open source organizations

CONCLUSION

Get the source of this theme from

`github.com/matze/mtheme`

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QUESTIONS?