Khronos Intellectual Property Framework Briefing

Khronos Background
Khronos is an industry consortium created “by the industry for the industry” to enable safe cooperation for the creation of open API standards for graphics, media, compute, vision and sensor acceleration. It is our stated mission to create open standards that are available for royalty-free use by the entire industry, and our actions over our history demonstrate that commitment. We achieve that goal with an Intellectual Property Rights (IP) Framework that protects both the IP of the Khronos membership, as well as the use of the specification in the industry, to enable widespread participation in the creation of these open standards for the good of the industry.

Khronos has over 100 Member companies, is commercially focused on growing hardware and software market opportunities, and manages specifications such as OpenGL®, OpenGL® ES, WebGL™, WebCL™, OpenCL™, OpenMAX™, OpenSL ES™, OpenVG™, StreamInput™, COLLADA™ and glTF™. More details about current Khronos Members and specifications can be found on the Khronos website at www.khronos.org.

Khronos’ primary products are open specifications and associated conformance tests that enable hardware and software communities to effectively communicate with each other. ‘Open’ does not primarily mean open source implementations of those specifications, though Khronos does often encourage and support open source projects where useful and appropriate. Rather, Khronos specifications are “open” in four senses: 1) any company is invited and able to join Khronos to contribute to and influence the development of Khronos specifications; 2) finalized specifications are publicly and freely distributed at zero cost from the Khronos web-site; 3) implementers have to pay zero royalties to Khronos or Khronos members for technology in the specifications; and 4) developers may freely use implementations of Khronos specifications.

The most critical aspect of any collaborative creation of API standards is the IP Framework under which that collaboration occurs. An effective IP Framework balances two goals: 1) providing protection for bona fide implementers so that Khronos members will not assert IP rights or demand royalties against a company for implementing a Khronos specification; 2) minimizing the licensing obligations of each member company to protect members’ IP properties. Khronos has a carefully constructed IP Framework that is explained in more detail below.

While Khronos specifications are under construction, drafts and other detailed materials are confidential to the Khronos membership. This is to protect the specifications by preventing non-Khronos members mining drafts for potential patent applications before standards are finalized and released. Sounds paranoid – but it really does happen!

Khronos members sign a membership agreement that brings them under the cooperative IP Framework, they agree to keep Khronos draft materials confidential, and they execute a conformance test source license that enables them to participate in creating and reviewing a body of code used to test implementations for compliance with Khronos specifications. There is an annual membership fee to fund Khronos’ activities and which includes access to any or all of the Khronos working groups with voting rights. Accredited academic institutions may join Khronos for just $1K per year which enables non-voting participation in all Khronos working groups.

Protection of Khronos Specifications for Use by the Industry
Understanding the IP framework is one of the most important steps in deciding whether any collaborative project makes sense for your company or institution. Khronos has a state-of-the-art IP framework that provides meaningful protection to Khronos specifications while also providing strong protection for members IP with tightly defined and restricted IP licensing obligations. This has enabled many companies with significant IP portfolios to participate in Khronos and enjoy the benefits of Khronos membership.

The Khronos IP policy can be summarized in that 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.

The Khronos IP framework specifically grants reciprocal royalty-free license only to other members. This is not to exclude non-members as a goal, but it is unacceptable to grant a valuable IP license to an unknown entity or entities (e.g. ‘the whole world’) that do not explicitly agree to reciprocal terms. So, the Khronos IP framework establishes the largest ‘raft’ of written reciprocal contractual obligations possible - i.e. between the entire Khronos membership.
Behind this is the stated commitment that anyone can implement a Khronos spec royalty free. In practice this means that if a non-member is tacitly following the terms of the written reciprocal agreement between the members, i.e. not suing Khronos members over the use of a Khronos specification, then Khronos welcomes their using the specification. Now, this stated commitment is not a written contract, but if a non-member requires a written contract between itself and the entire Khronos membership for implementing any Khronos specification, it just has to join Khronos. As Khronos membership is guaranteed (by our bylaws) to be open to any company that wishes to join, any implementer may gain access to a written reciprocal license for the cost of a Khronos membership.

For companies implementing a complete specification, Khronos membership is very inexpensive (and we do need membership fees to keep the lights on), however open source communities often cannot afford a Khronos membership. To address this, Khronos has a proud history of waiving membership fees to open source practitioners who are undertaking bona fide efforts to construct open source implementations of Khronos specifications. This enables them to enjoy the same protection as other Khronos members for free.

Finally, a common comment is that essential 'patents held by Khronos members are bad', but in fact, the Khronos IP framework makes the reverse true. Under the Khronos IP Framework all members with patents that are essential to a ratified Khronos specification reciprocally license that patent royalty-free. Importantly, the more patents that Khronos members possess that are reciprocally licensed, the larger and stronger the patent 'raft' that protects implementers of the specification against non-members asserting patents against the spec. Patents that are licensed to you for your protection are a very good thing.

**Protection of Khronos Member IP**
The Khronos IP framework provides multiple mechanisms by which the IP of members is protected as default – plus there are additional elective protective measures members can choose to use.

To maximize protection for member IP the reciprocal license grant is carefully minimized and does NOT cover: a) implementations that are not fully conformant, as defined by passing Khronos conformance tests; b) IP that is not essential, i.e. where any commercially viable alternative implementation techniques exist that do not need a member’s IP to be licensed; and c) any technology that is not explicitly called out in the specification for interoperability, meaning that underlying hardware or software implementation techniques are not licensed through Khronos participation.

This very narrow licensing scope often means that in practice members are licensing very little, if any, IP. Plus, as the license grant is reciprocal between all Khronos members, in return for their grant each member receives royalty-free licenses for essential IP in Khronos specifications from all other participating Khronos members.

The Khronos IP Framework is designed to make licensing obligations precisely understandable: a) the only point of licensing is the instant of ratification by the Khronos Board, and ONLY essential IP in the final spec is reciprocally licensed, meaning that discussions and contributions not included in the final specification bring no licensing obligation; b) Khronos members do not have to disclose any IP that will be included under the standard reciprocal license – so no patents are ever discussed in open Khronos meetings so that members are not put on notice of specific patents.

As Khronos activities span a wide range of APIs, Khronos members can explicitly withdraw from participation in any subset of working groups by issuing a Working Group Exclusion Certificate. If a Working Group Exclusion Certificate is in place, and the member does not attend any meetings for the excluded working group, the member does not participate in any way in the reciprocal licensing grant for specifications produced by that working group.

If members have specific patents they do not want to be included in the reciprocal license, they can issue an “IP Disclosure Certificate” prior to Ratification to exclude specific essential claims from the reciprocal license, regardless of whether or not those claims are associated with an explicit contribution from the participant. This means if your company has essential patents that you do not wish to license, those patents can always be ring-fenced. In practice, due to the narrowness of the reciprocal license, Members only rarely find it necessary to exclude a specific patent; in fact this mechanism has only been invoked a handful of times in the ten year history of Khronos Group.

Finally, before any specification is ratified, there is a Ratification Review Period of at least 42 days and all members are notified of the start of the Review Period. IP Disclosure Certificates can be issued at any time during drafting, not just during the Review Period, but the notifications provide a reminder to all members that ratifications are scheduled in case they wish to take any elective actions.

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