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Licensing Considerations
for OpenSim-Based Virtual Worlds

By Shenlei E. Winkler, Fashion Research Institute, USA

Abstract

Content creators and owners of OpenSim-based virtual worlds alike struggle with issues surrounding licensing and usage of content in these immersive spaces. The Fashion Research Institute (FRI) is specifically addressing these issues and more as part of the process of licensing its Shengri La regions to enterprise. This use case is the basis of ongoing legal research by FRI's sister organization, Fashion Research Foundation, which has created a legal steering committee formed of attorneys volunteering from the American Bar Association's Virtual Worlds and Online Gaming committee. A practitioner's view of our strategic perspective is presented in the context of licensing of content in OpenSim-based virtual worlds.

Keywords*:* virtual worlds; licensing; OpenSim; content creators.

Licensing Considerations
for OpenSim-Based Virtual Worlds

By Shenlei E. Winkler, Fashion Research Institute, USA

Figure 1: The noted Shengri La Spirit build, shown on the ScienceSim grid as hosted by Intel Labs.

The coming diaspora of content creators from 'walled garden' platforms to the open source grids run on the OpenSim platform offers both exciting opportunities as well as dangerous pitfalls for the unprepared. Opening new marketplaces to content creators has the ability to add appreciably to the global marketplace, with virtual goods accounting for $2.6 billion in sales in 2008 (Virtual Goods News, 2009), and that number expected to increase exponentially.

Content creation for these OpenSim-based grids requires an appreciable input of time and dedication by content creators. Most of these creators must currently develop the same content for each grid where they wish their content to be available. The current state of the art OpenSim Archive Resource (OAR) files does enable content creators to develop content once on their own regions and extract the content included in the regions as OAR files. However, most content creators lack the ability to generate OAR files, so they are limited to developing on each grid or region where they want their content to be available.

Coming technology advances will enable these content creators to readily move their content around and make it more widely and readily available. But before content creators will accept these new technology solutions, and make their content available to commercial grid operators, legal considerations governing the licensing of their content need to be addressed. These include the functional legal definition of terms which are generally accepted by the legal community, the development of content quality standards against which content may be assessed and qualified, the deployment of development frameworks to help ensure that content creators can issue certificates of originality and produce documentation to prove authenticity of their content, and finally, the standardization of contractual agreements between content creators and users, content creators and grid operators, and grid operators and users.

The following article focuses on these considerations in the context of an existing test case between the content developers at Fashion Research Institute (FRI) and engineers at Intel® Labs, where large-scale, complex builds and creations are developed on both FRI and Intel hardware and moved back and forth between the hardware servers of the two companies. The existing FRI-Intel agreement defines the use of this content for performance research by the Intel team. The agreement and transfer of content serves as a test case to help determine how additional aspects of content development, content curation, and management need to be considered in addressing some of the missing components of content licensing by entities for commercial purposes.

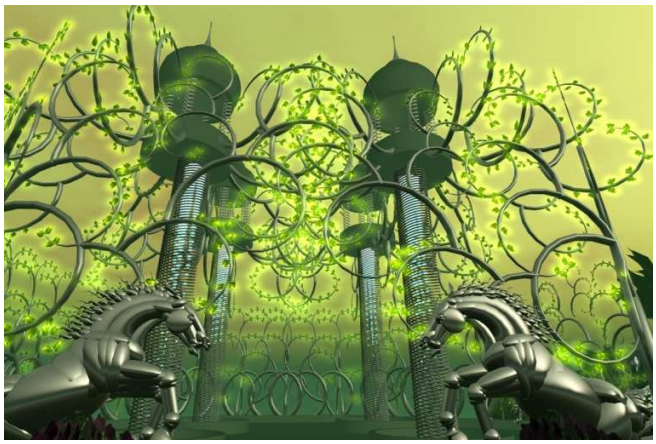

Figure 2: Another view of Shengri La Spirit, on the ScienceSim grid, hosted by Intel Labs

Background

Licensing content into virtual worlds is often compared to the settling of the American 'Wild West.' Content developers are claiming new space and pitting themselves against content thieves and other, often unforeseen, risks to their intellectual property. There is considerable confusion within the content developer community about how the terms of service (TOS) and end user licensing agreement (EULA) of a given platform may have an impact on their intellectual property ownership and protection of their rights. Many content producers, who develop virtual goods for sale and use in these immersive spaces, are understandably leery of exposing themselves to the risk of loss of their intellectual property. Specifically, they are concerned about this loss when moving their product onto a new platform where the TOS and EULA that governs the end use of their content may be widely variable in scope and not well written or executed. With the advent of low barrier-to-entry worlds, such as Second Life and OpenSim, licensing considerations for managing a recognized brand and protecting brand extension become even more pressing.

Figure 3: Details of the Shengri La Chamomile build Saltwater House garden.

Content Licensing and Distribution

Fashion Research Institute is working with a selected committee of attorneys to explore how licensing is best addressed in a metaverse of OpenSim-based virtual worlds. Using a specific FRI use case with Intel Labs as an exemplar, this paper will examine licensing considerations for content producers who wish to extend their content into the very wildest of all the new immersive space frontiers, OpenSim.

OpenSim (http://www.opensimulator.org) is an open source, virtual world platform which originated in 2007. The source code is developed and maintained by a loosely organized group of developers, and the platform uses client viewers in common with another popular virtual world, Second Life®. The backend functionality of OpenSim is much broader than Second Life and enables users and operators of OpenSim-based virtual worlds to have access to a much wider array of functionality into backend systems, such as enterprise resource planning, business intelligence, and other database driven applications. OpenSim itself is a platform on top of which applications may be built.

Owners and operators of these grids have full control over all content once it is placed on the individual grid's asset servers. Currently, owners and operators do not have any control over what sort of content gets uploaded to their region, although they can remove content after it has been uploaded. Grid operators such as Linden Lab are currently sheltering behind the 'Safe Harbor' provision of the Digital Millennium Copyright Act to protect themselves against claims of infringement by IP owners. However, it is unclear what the legal status of a grid operator actually may be in cases where the grid operator receives material benefits through fractions of ancillary sales of stolen intellectual property made by third parties using the grid operator's servers and micropayment systems.

Entities which have opted for platforms run behind their own firewall have control over their own intellectual property to the extent that it is loaded into the virtual world regions behind the enterprise firewall. In licensing content, these entities will of necessity be concerned with two things: first, that all content which is licensed to them is has clean provenance, meaning the content provider can issue a Certificate of Originality thus ensuring that all content provided under the agreement is the original, authentic work of their content developers. This will assure the entity that it is legally protected against claims of infringement, but it is only half of the

equation. The entity must then assure the content developer that all due process has been followed to ensure that the content developer is protected against the loss of their content IP.

As with any sort of nonpublic data, the primary security hole with this sort of content behind an enterprise firewall is the enterprise's own employees, who can copy and restore content onto other virtual worlds. Firewalls will not stop content theft by insiders. This is a substantial security breach and one which cannot be readily managed by technological solutions, but which may be managed by legal solutions.

In licensing to entities, content creators must trust the grid operator to abide by whatever agreement has been regarding the dispensation of their content. It also means that there is a dangerous chasm into which a content creator can fall, in which unscrupulous grid operators force a change of the creator and ownership tags on content instantiated into these OpenSim-based worlds. In this situation, content developers who have not kept careful records through time-stamped files and other forms of documentation could find themselves in a situation where they may attempt legal recourse but lack documentation to prove their claims of infringement.

There are several aspects of OpenSim-based worlds and Second Life® regions which must be considered by any entity which plans to use these immersive spaces. Any content (text, images, 3-D models, and so on) which can be viewed by the user using a viewer is not currently protected by digital rights management technology. The process of 'viewing' a scene composed of images, models, text, and/or code downloads the images and models onto the user's hard drive, where it is stored in cache. Practically speaking, each user has just obtained a copy of anything they have seen, or 'viewed', using their viewer which is now stored on their hard drive until such time as they 'dump their cache' or clear out old images and model information.

That users now have a copy of this content is what underpins much of the content theft that occurs in these virtual worlds, and what is the ultimate conundrum to licensing content into these virtual worlds. OpenSim virtual world operators want their users to see the content, but there is currently no easy or cost effective way to block users from acquiring copies of that content on their hard drive. Most users of virtual worlds are not capable of using this copied content for nefarious purposes, either because of socio-cultural conditioning against stealing or because they lack the technological knowledge to extract this data from their hard drive caches. Others, however, are not bound by similar moral or ethical codes, and do have the technological wherewithal to steal this content and 'launder' it to resell on other grids under their own name. This poses the question, then, how can the rightful owners of the content be protected if there's no easy or effectual technology solution?

It therefore becomes a pressing matter for the existing legal channels to provide that protection for content in OpenSim-based virtual worlds.

In the United States and in most other developed countries, copyright, patent, and similar intellectual property laws are well-established and understood by the legal communities in these respective countries. While IP laws do vary from country to country, in general there is agreement that protecting creators' rights to their creations helps ensure that these creators continue to invent and create which in turn helps support the economy of these countries. Legal channels already exist that protect content creators of all classes.

The content pipeline into OpenSim remains blocked, however, because of the fear, ignorance, and lack of resources to protect the individual content creators whose work forms the rich ecosystem of Second Life content. Content creators may be afraid of what will happen with their content, if they place it on an OpenSim-based grid, and what it will mean to their livelihood if their content is 'stolen' and repurposed on other grids. They may be ignorant of the steps they should take in advance of releasing their work, to protect it and to provide themselves with sufficient documentation to use in the case of legal action. They may even be unaware of what aspects of their work can, and cannot, be protected. And of course, good legal representation is not inexpensive. A good attorney, who can develop a content licensing contract to protect the content creator, may charge more than the creator will make from their license. And of course, pursuing infringement cases can cost upwards of $30,000 and more, often with little opportunity to redress the financial losses caused by the initial infringement, much less the costs of the actual legal action.

What is missing, then, are legal definitions which can be used to create contracts which will withstand scrutiny in the event of a legal challenge, an understanding of the content creators about how they need to protect their own work both prior to and after releasing it as licensed content, education about what can and cannot be protected, and standards for both this sort of content and for legal agreements that govern engagements between content creators and virtual world operators.

Figure 5: The test case: Shengri La Spirit licensed to Intel Labs for use for performance testing.

Fashion Research Institute Test Case

Fashion Research Institute made an agreement with Intel Labs to provide content for an OpenSim-based grid of regions, ScienceSim (http://www.sciencesim.com), as part of a year-long research arrangement. In developing this agreement, the very same questions emerged, but were dealt with by using existing laws and language. Because the nature of the agreement was to conduct research, there was both an explicit and implicit understanding that while parties on both sides would use scrupulous care in moving content back and forth between FRI content creators and Intel Labs' hosted regions, there was ultimately no technological way to protect the individual FRI content creator from the theft of small objects or individual textures by users of these regions where access was gained using any of the many commonly available client viewers.

What is critical to note about this test case is that i) it was a research agreement, where some of the expected deliverables were both the questions that need to be asked and (some of) the answers to those questions, and that ii) this is not a typical legal agreement that might be executed between a typical content creator and a commercial OpenSim-based virtual world.

The content provided to ScienceSim, in the form of avatar customization content, regions, buildings, and landscaping is intended for a variety of uses, including the distribution of new default avatars to visitors to the grid. As a research collaborator, FRI willingly assumed a degree of risk towards its intellectual property that other content creators might find onerous. We felt that only by exposing our content to the possibility of loss could we move the OpenSim platform forward to the betterment of the code base. And certainly, that risk has been justified, with many new performance code patches being created as a result of the content developed by FRI for use by the Intel engineers collaborating with us.

As content is moved back and forth, new areas of research are exposed, and new questions develop. Some answers are easy: others, not so much. Occasionally content movement is expedited through the use of convenient pathways (chosen after mutual agreement and always documented) to get content moved around to provide datasets to answer a bigger question, but the pathway chosen would not be suitable for a commercial licensee or licensor.

This test case varies, as well, in the amount of management oversight and documentation required, which would be prohibitive to a commercial license. Moving a new tree or flower to a grid under a commercial license should be a simple matter; moving content onto ScienceSim requires documenting its originality down to the original pixel, maintaining a file of email agreements and documentation about how the tree is to be used, and lastly, moving an entire OAR file to a special region, where the tree has its creator tags preserved and it can be collected into the inventory database by the creator. The process is time consuming and requires manual processes that will need to be automated before it can be effective for a commercial license.

Figure 6: One of the horse statues on Shengri La Gallery also licensed to Intel Labs for use on ScienceSim.

Lessons Learned

Fashion Research Institute has defined a series of requirements for content creators working with FRI to use FRI services to help license their content. These requirements have evolved from the agreements that FRI has made with Intel Labs to provide content into ScienceSim. It is critical that FRI protect itself and any downstream licensors from legal challenges of professed content originators.

FRI created a framework within which content creators are required to work. The use of an extension of their apparel industry application, Black Dress Design Studio, enables creators to quickly document and register their work into a secure database. It then automatically registers their copyright with the US Library of Congress and produces a final hardcopy output in PDF form, which can be filed and shared with legal counsel in the event that this is needed for legal action. We have also created a series of standards against which content is judged, enabling content creators to issue a certificate of originality to FRI for their content.

Tracking content back to its moment of instantiation provides a degree of protection against future claims against creator, licensor, licensee, and law-abiding users. While nuisance claims may arise, they can be shown to be nuisance claims through virtue of this documentation showing the instantiation of content from the original pixel. It also provides the content creator with date-stamped original files which may be admissible as evidence in the event that the content creator's work is infringed and they seek legal recourse. This is germane because it enables all stakeholders to engage with the protection which already exists in extant legal channels.

Towards the Future of OpenSim Content Licensing

An area which requires further exploration and input from the legal, technology, and content development communities is that of definition of terms in common usage in the virtual world space which are properly aligned to existing legal definitions but exempt from any technological implementations.

FRI is working with its sister organization, Fashion Research Foundation, which has formed a committee to develop such a lexicography of terms and definitions for use by OpenSim grid operators, content creators, and content aggregators and licensing houses. These documents will be freely released under an appropriate license for use by all according to the terms of the license.

These documents will enable all stakeholders to develop licensing agreements and contracts to move content between content creators and OpenSim-based grid operators. In addition to aligning technology and content development terms to legal definitions, existing terms of service and end user licensing agreements must also be considered by all stakeholders.

Currently, most OpenSim-based worlds have relatively loose EULA and TOS agreements which primarily address users' rights and privileges with regards to the actual user experience. Minimal attention has been addressed to various content considerations. For example, how should users respond to the OpenSim-based world operator in the event that a user identifies content which has clearly been laundered or which is clearly in violation of another entity's

trademark, patent, or copyright? What 'rights' does a user have with respect to content? Can an individual content creator define how they will allow their content to be used, and can the grid owner/operator deliver on these requirements? Can content creators enforce a requirement to remove their content in the event that the license is infringed, and how can they be assured that their content is being appropriately handled? How can users be protected from purchasing laundered content?

This is a fairly common occurrence in virtual worlds and immersive spaces where users can create their own content. Either from ignorance or intent, a user locates and introduces content which clearly infringes existing intellectual property. The OpenSim-based region operator may not even be aware that this content is present on their grid. There are many actual examples of this sort of infringement observed in both OpenSim-based worlds and in Second Life, but there are many other examples of infringement which occur and are unreported simply because the user base has no ability to report, does not understand how to report, or does not care to report infringements.

The Digital Millennium Copyright Act (DMCA) contains a provision (Safe Harbour) to protect the unsuspecting web hosting service from claims of infringement by original copyright owner when infringing material is placed on the hosting service's machines. However it is not entirely clear if this is extensible to entities hosting virtual worlds, especially when the entity hosting the virtual world is also the entity which employs the infringer, and the entity that benefits from content which has been infringed. Is the DMCA provision automatically extended to virtual world content which is placed on a commercial grid operator's facilities, especially where the commercial grid operator benefits materially from that infringing content? Who is liable for this infringement? Is it the content launderer for instantiating the laundered content into the virtual world, the commercial grid operator for winking at allowing laundered content onto their grid, or is it both parties?

As OpenSim matures and legally organized entities begin both using and creating OpenSim-based grids, these sorts of considerations will require more formal legal attention. The current generation of client viewers (the software used to access these virtual worlds) do not incorporate any appreciable form of digital rights management, so it falls into the purview of the legal community to help define not only the terms used to discuss these worlds and their content, but also the behaviors which are permitted within the worlds and by the actual creators and operators. Only through appropriate legal structure can the content pipeline into these virtual worlds be unstopped, which will ultimately enable the development of a 3-D Internet, with the formation of a web of federated virtual worlds.

Towards a Profession of Content Creators

As an increasing number of enterprise users enter OpenSim-based worlds, pressure will increase on both content creators and grid operators alike to not only provide high quality content, but to ensure that the content provided does not infringe on existing copyright owners' rights. The establishment of clearly understood standards which can be used to support both certificates of originality and as guidelines to develop legally binding contracts is clearly required, and the evolution of organizations whose focus is assisting with the development of these standards is already beginning.

Fashion Research Institute has worked with Fashion Research Foundation to develop such an organization, the Professional Virtua Designer Society. In addition to providing professional development to virtual goods developers, this Society will also enable these content creators, who are usually freelance agents, to have access to a broad range of benefits including health, medical, dental, vision, and disability plans as well as exposure to professional development standards. Providing content creators with these very benefits ensures that they can care for themselves as they pursue their career. In addition, alignment with a professional

society offers these content creators additional financial and emotional value. Their work is perceived by the marketplace as professional, which allows them to charge more for their work; and, both their customers and they themselves place a higher emotional value on their work.

Until content creators have the ability to recognize themselves as professionals, it will continue to be difficult for them to protect their work as professional output which can be sold, licensed, and otherwise protected. While this is may seem to be a minor point, marketers everywhere would agree that brand identity is a critical tool in their toolkit.

Figure 6: The Saltwater House on Shengri La Chamomile. Shengri La Chamomile was created in situ and served as another test case for content management on public grids.

Content Delivery Needs

More focus needs to be placed on defining specific terminology to begin developing standardized agreements, so that the rights of both content creators and grid operators are protected, and they may easily engage in contractual agreements. New content delivery mechanisms will present both tremendous growth opportunities as well as considerable legal concerns if the legal terms are not defined in advance of use by content creators seeking to deliver their content onto new grids. Similarly, grid operators must be protected against claims of copyright infringement by original copyright owners, in the event that one or more of their users infringe and bring laundered content onto their grid. Methods of establishing complicity between grid operators and users must be defined, in order to allow original copyright owners recourse against infringers.

Additionally, a clear definition of how aspects of virtual world content are copyrighted is needed. The state of the art with OpenSim-based worlds have enabled a number of delivery mechanisms for content between OpenSim-based worlds, which include Inventory Archive

Resource (IAR) files, OpenSim Archive Resource (OAR) files, and soon distributed asset services will also enable content delivery from one grid to another. This creates an array of questions which will require both legal and technological answers to help ensure that all stakeholders are protected and can engage in business in an environment which is legally circumscribed.

Because OpenSim as a platform is so new, many new topics, concerns, and considerations can be expected to arise. The most pressing ones to the evolution and delivery of content into OpenSim-based regions are content quality standards, definition of legal terms, and standardized legal agreements. Once these become established, there will undoubtedly develop an array of additional topics which will require focused attention, including ownership of performances, how regions are actually licensed, for what purpose the content will be used, and how these questions should be best addressed.

Current terms of service agreements do not address future concerns about content developers' ability to extract their content from a given region or grid. This is an area which will become increasingly critical, especially as content creators who began their careers in closed grids such as Second Life wish to extract their content and take it elsewhere.

Conclusion

Open source, open grids that run on the OpenSim platform offer both exciting opportunities and dangerous pitfalls for the unprepared. Opening new marketplaces to content creators has the ability to add appreciably to the global marketplace, with virtual goods accounting for $2.6 billion in sales in 2008, and that number is expected to increase exponentially in 2010. Addressing the legal considerations of content licensing, developing, and enforcing standards for content creation and defining standardized contracts will help open this new area of business while protecting all stakeholders in the value chain. Virtual worlds are already a reality, but their wide spread mass adoption will be hindered until legal guidelines can be created to protect those whose creative vision gives form and live to the units that will form the backbone of this next technological wave.

Creating a working lexicography for the use of the legal practice in developing standardized agreements is critical to the continued evolution of these OpenSim-based virtual worlds, which have been hampered by the lack of high-quality content. Talented content creators, justifiably leery of exposing their intellectual property to an unregulated environment, will be afforded the protection of existing legal channels, but only if a bridge between this new space and existing legal terms and contracts can be built. The foundation of that bridge is a functional, generally accepted lexicography of key terms the usage of which can be generally agreed to by legal and lay practitioners negotiating appropriate content licensing agreements as well as a repository of standardized legal contracts, coupled with the evolution of the content creators as a class of professionals.

As these areas are addressed, this marketplace will open to content creators, providing them with an increasingly wider range of revenue opportunities. This in turn will begin to enable adoption of the 3D web not just by technology companies and enterprise, but also increasingly by the mass market consumer.

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Key Terms & Definitions

Content: Digital assets which are created by individuals or teams and used to develop virtual worlds.

Creator Intent: The intention of the creator towards his asset, whether it be allowed to be broadly and freely distributed under any of the many licensing schemes, or if they wish a given asset to be copied but not transferrable to others. Intent can allow copying, transferrable, and modifications to the original asset; currently both Second Life and OpenSim-based worlds only allow the creator to mark these three intents, which fails to allow for a content creator's intent of their asset for transfer between Second Life and other platforms.

Creator Tag: To the user in the virtual world, it is the name of the individual who created any discreet bit of content, which can be examined by any user by looking at the property screen of that content. This is the original creator and should not be changed.

Digital Millennium Copyright Act of 1998 (DMCA): The best working definition for the DMCA can be found at the Wikipedia, at http://en.wikipedia.org/wiki/Digital_Millennium_Copyright_Act.

Digital Rights Management (DRM): Usually a technology solution; attempts to prohibit illegal or not allowed copying of digital assets.

Inventory Archive Resource (IAR): A new file format unique to OpenSim-based virtual worlds, invented by a core OpenSim developer to assist in moving user's inventory between grids. This can be compared to a user's suitcase. It is a very new file format and has not been tested.

OpenSim Archive Resource (OAR): A new file format unique to OpenSim-based virtual worlds, invented by a core OpenSim developer to assist in moving entire regions full of content from grid to grid. Care must be taken in restoring OARs onto new regions, or the content creator and owner tags are changed, removing the original information.

OpenSimulator (OpenSim): Open source virtual world platform which uses a viewer in common with Second Life. For more information, please visit http://www.opensimulator.org.

Owner Tag: The person who currently owns a given asset. This tag is fluid and can change depending on who currently possesses that asset.

Second Life: Closed source virtual world platform developed and owned by Linden Lab, which uses a viewer in common with OpenSim. For more information, please visit http://www.secondlife.com.

User: Individual who has a registered account and an avatar representation on any given virtual world. Users may or may not verify their real life identity, depending on the ToS agreement with the virtual world in question.