openASSA Project

# **Working Party 3 – Legal**

# Discussion document: Opensource licensing

## Introduction

Typically, when an individual makes a creative work (such as writing, graphics, or code), the copyright in that work is owned by the creator by default. That is, the law assumes that as the author of the work, the creator has a say in what others do with it. A key exception to the author being the owner of the copyright in the work, is where the author creates the work in the course and scope of his/her employment with an employer, the employer is the owner of the copyright. Copyright rights can only be transferred in a written document signed by the copyright owner.

Opensource is an unusual circumstance, however, because the author/owner expects that others will use, modify, and share the work. But because the legal default is still copyright ownership, you need a license that explicitly states these permissions.

If a project doesn’t apply an opensource license, everybody who contributes to it also becomes a copyright owner of their work. That means nobody can use, copy, distribute, or modify their contributions – and that “nobody” includes the project owner.

The project may also have dependencies with license requirements. For example, employers’ policies may also require the project to use specific opensource licenses.

Note that making a project public on Github is not the same as licensing it – licensing is not part of GitHub’s terms of service.

Standardised opensource licenses are readily available, with the choice over which license to use being driven by the dependencies of the project. This document only considers 4 of the most commonly used opensource licenses.

## Key considerations when choosing a license

### Complexity

As the complexity of a licence increases, so does the difficulty of attracting contributors and users of the code. Ideally the chosen licence should be easily interpretable and be the least complex licence that meets all the key requirements of the project.

### Standardisation

Any license that is chosen should be one that is approved by the Open Source Initiative. This simplifies the use of the project by all stakeholders, as the legal requirements of standard licenses are generally well known and understood.

For more information on the requirements of approved licenses, refer to Appendix E.

A list of approved opensource licenses can be found at <https://opensource.org/licenses>.

### Limitation of Liability

The authors of the code must not be able to be held liable for the use of the code.

### Copyleft

Copyleft is the practice of granting the right to freely distribute and modify intellectual property with the requirement that the same rights be preserved in derivative works created from that property. [Source: <https://en.wikipedia.org/wiki/Copyleft>].

One of the key features of Copyleft is that any and all modifications to the work covered by the Copyleft licence **must** be released for public use under the same license conditions. For this project, this is a very undesirable feature, as any product specific and company specific changes to the source code will need to be made available, which will likely breach companies’ intellectual property restrictions.

### Restrictions on the use and distribution of the code

Given the nature of the code being developed, any license must allow users to use the software commercially and privately, and allow them to modify code without restriction.

However, it may be desirable either to restrict third parties from using the code in proprietary software that they offer for sale, or to require them to acknowledge the use of the code.

Where users make changes to the code and distribute the modified code, certain licences require that any modifications to the original code are disclosed.

It may also be useful to require any users of the code to attribute or acknowledge the code

### Protection from patent trolls

Consideration may want to be given to protecting the code from patent trolls and other patent owners. This avoids the situation where the code is patented by a third party and all users of the code are required to pay fees to the owner of the patent in order to continue to use the code.

Note that this can be dealt with through a Contributor Agreement, rather than through the licence, if required. Refer to Discussion Document: OpenSource Contributor Agreements.

## Key types of standard licenses

### MIT

This is the leanest license. It's a “do whatever you want with my stuff, just don't sue me” type of license.

The MIT license is suitable if you’re afraid no one will use your code; you’re making the licensing as short and non-intimidating as possible. It is at risk of attack by patent trolls, and doesn’t restrict someone else from profiting from the code. That is, you have to be okay with someone else taking your MIT-licensed software and building another commercial closed-source application (or plugin or add-on) based on it.

You must include the license and copyright notice in all copies or substantial uses of the work.

See Appendix A for the specific license text.

### BSD

The BSD (Berkely Software Distribution) license offers more flexibility than the MIT license, and can be as lean. There are several versions of the BSD license, but we are interested in the 2- and 3-clause agreements, and the BSD+Patent license.

The 2-clause agreement is equivalent to the MIT license.

The 3-clause agreement adds a clause regarding promotion and advertising materials, something that is not part of the MIT license. Specifically, the addition of the 3rd clause means that licensees cannot use the original author name or trademark to endorse derivative works.

The BSD+Patent license is a relatively new license that uses the 2-clause BSD license and modifies it by adding the explicit patent grant of the Apache License v2.

See Appendix B for the specific license texts.

### Apache

The Apache license has a similar philosophy to the MIT license, but uses more words. The wordiness creates greater specificity about contributors’ obligations, which might help in a dispute and to prevent abuse by patent trolls. It may also mean that a separate contributor agreement is not necessary. But it also can be a turn-off — “Do I need to have my lawyer look at this?” comes up more with Apache than with MIT. It works well for organizations or projects that are larger and managing more contributors, but don’t care about others commercializing the work. It can also help bring on board organizations that are more concerned about software patents or patent trolls.

Any significant changes made to software must be stated. If the library has a "NOTICE" file with attribution notes, you must include that NOTICE when you distribute. You may append to this NOTICE file.

See Appendix C for the specific license text.

### GPL

This is the heaviest license. It allows users to copy, distribute, and modify the software as long as they track changes/dates in source files. It includes copyleft requirements - any modifications to software including (via compiler) GPL-licensed code must also be made available under the GPL along with build and install instructions. This means that modifiers would need to make these changes available as opensource. This could be an issue for companies that wish to share code modifications between different legal entities within the company, as they would need to make all of these modifications publicly available under the GPL license.

If you use this license you must:

* Describe whether copies of the original software or instructions to obtain copies must be distributed with the software.
* State significant changes made to software.
* Disclose all code linked with GPL 3.0 source code under a GPL 3.0 compatible license.
* Include the full text of license in modified software.
* Describe whether the original copyright must be retained.
* Include the installation information necessary to modify and reinstall the software, if the software is part of a consumer device.

See Appendix D for the specific license text.

## Comparison of licenses

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Aspect** | **MIT** | **BSD** | **Apache** | **GPL** |
| Complexity | Very low | Low | Medium | High |
| Standardisation | Y | Y | Y | Y |
| Authors cannot be held liable | Y | Y | Y | Y |
| Allows private use | Y | Y | Y | Y |
| Users can modify code | Y | Y | Y | Y, but subject to copyleft requirements |
| Users can distribute code | Y | Y, but may be required to acknowledge | Y | Y, but subject to copyleft requirements |
| Requirement to state changes | N | N | Y | Y |
| Protects against patent claims | N | Y, only if using BSD+Patent | Y | Y |

## Including the license in code

If the license is very lean (e.g. MIT, BSD), it is recommended to add it at the beginning of all source code files. When the license is lengthy, it can be added at the beginning of each file by stating the name of the license and including a link to the full license (i.e. the LICENSE file at the root of your project). For example, the following could be added at the top of each of the source files:

*Copyright (c) <year>, <copyright holder>*

*All rights reserved.*

*This source code is licensed under XXXX license found in the LICENSE file in the root directory of this source tree.*

It is also best practice to add a copy of the license at the bottom of the README.md file under a License section.

## Working Group recommendation

TBC

Given the considerations above, and the characteristics of each license, this working group recommends that openASSA uses a BSD+Patent license. This will allow users of the code to access and modify the code for free, and permit that any modifications or derivative works can be kept confidential. For example, an insurer could use the code for free in its valuations process without any requirement to make its valuations process opensource as a result.

A notable implication of selecting this license is that the openASSA software could be packaged and sold by a third party in a for-profit proprietary product. However, it is recommended that openASSA accepts this possibility for the following reasons:

* Should this possibility materialise, it would be an indication of the good quality of the openASSA software. This, in turn, might lend credibility to the software and encourage more actuaries to use the opensource version of the code.
* The opensource version of the code would still be available, so actuaries would not be forced to buy a proprietary version. They could simply use the opensource version.
* For-profit derivatives of the openASSA software would increase competition in the actuarial software market and potentially reduce costs for insurers and actuaries over time which, in turn, could encourage more competition in the insurance sector.

Finally, this working group has recommended a license which includes protection against patent trolls. However, it is not clear whether this is a material risk for openASSA. As such, it is recommended that ASSA’s lawyers review the BSD+Patent license and confirm whether it is indeed suitable for openASSA’s needs, and whether the protection against patent trolls is required.

## Appendix A – MIT License

Source: <https://opensource.org/licenses/MIT>

Begin license text.

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End license text.

## Appendix B – BSD Licence

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## Appendix C – Apache License

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## Appendix D – GPL v3

<https://www.gnu.org/licenses/gpl-3.0.en.html>

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Version 3, 29 June 2007

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Developers that use the GNU GPL protect your rights with two steps:

(1) assert copyright on the software, and (2) offer you this License

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For the developers' and authors' protection, the GPL clearly explains

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Some devices are designed to deny users access to install or run

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pattern of such abuse occurs in the area of products for individuals to

use, which is precisely where it is most unacceptable. Therefore, we

have designed this version of the GPL to prohibit the practice for those

products. If such problems arise substantially in other domains, we

stand ready to extend this provision to those domains in future versions

of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents.

States should not allow patents to restrict development and use of

software on general-purpose computers, but in those that do, we wish to

avoid the special danger that patents applied to a free program could

make it effectively proprietary. To prevent this, the GPL assures that

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The precise terms and conditions for copying, distribution and

modification follow.

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To "modify" a work means to copy from or adapt all or part of the work

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A "covered work" means either the unmodified Program or a work based

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To "propagate" a work means to do anything with it that, without

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To "convey" a work means any kind of propagation that enables other

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An interactive user interface displays "Appropriate Legal Notices"

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1. Source Code.

The "source code" for a work means the preferred form of the work

for making modifications to it. "Object code" means any non-source

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A "Standard Interface" means an interface that either is an official

standard defined by a recognized standards body, or, in the case of

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The "System Libraries" of an executable work include anything, other

than the work as a whole, that (a) is included in the normal form of

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Major Component, or to implement a Standard Interface for which an

implementation is available to the public in source code form. A

"Major Component", in this context, means a major essential component

(kernel, window system, and so on) of the specific operating system

(if any) on which the executable work runs, or a compiler used to

produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all

the source code needed to generate, install, and (for an executable

work) run the object code and to modify the work, including scripts to

control those activities. However, it does not include the work's

System Libraries, or general-purpose tools or generally available free

programs which are used unmodified in performing those activities but

which are not part of the work. For example, Corresponding Source

includes interface definition files associated with source files for

the work, and the source code for shared libraries and dynamically

linked subprograms that the work is specifically designed to require,

such as by intimate data communication or control flow between those

subprograms and other parts of the work.

The Corresponding Source need not include anything that users

can regenerate automatically from other parts of the Corresponding

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and control, on terms that prohibit them from making any copies of

your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under

the conditions stated below. Sublicensing is not allowed; section 10

makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological

measure under any applicable law fulfilling obligations under article

11 of the WIPO copyright treaty adopted on 20 December 1996, or

similar laws prohibiting or restricting circumvention of such

measures.

When you convey a covered work, you waive any legal power to forbid

circumvention of technological measures to the extent such circumvention

is effected by exercising rights under this License with respect to

the covered work, and you disclaim any intention to limit operation or

modification of the work as a means of enforcing, against the work's

users, your or third parties' legal rights to forbid circumvention of

technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you

receive it, in any medium, provided that you conspicuously and

appropriately publish on each copy an appropriate copyright notice;

keep intact all notices stating that this License and any

non-permissive terms added in accord with section 7 apply to the code;

keep intact all notices of the absence of any warranty; and give all

recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey,

and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to

produce it from the Program, in the form of source code under the

terms of section 4, provided that you also meet all of these conditions:

a) The work must carry prominent notices stating that you modified

it, and giving a relevant date.

b) The work must carry prominent notices stating that it is

released under this License and any conditions added under section

7. This requirement modifies the requirement in section 4 to

"keep intact all notices".

c) You must license the entire work, as a whole, under this

License to anyone who comes into possession of a copy. This

License will therefore apply, along with any applicable section 7

additional terms, to the whole of the work, and all its parts,

regardless of how they are packaged. This License gives no

permission to license the work in any other way, but it does not

invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display

Appropriate Legal Notices; however, if the Program has interactive

interfaces that do not display Appropriate Legal Notices, your

work need not make them do so.

A compilation of a covered work with other separate and independent

works, which are not by their nature extensions of the covered work,

and which are not combined with it such as to form a larger program,

in or on a volume of a storage or distribution medium, is called an

"aggregate" if the compilation and its resulting copyright are not

used to limit the access or legal rights of the compilation's users

beyond what the individual works permit. Inclusion of a covered work

in an aggregate does not cause this License to apply to the other

parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms

of sections 4 and 5, provided that you also convey the

machine-readable Corresponding Source under the terms of this License,

in one of these ways:

a) Convey the object code in, or embodied in, a physical product

(including a physical distribution medium), accompanied by the

Corresponding Source fixed on a durable physical medium

customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product

(including a physical distribution medium), accompanied by a

written offer, valid for at least three years and valid for as

long as you offer spare parts or customer support for that product

model, to give anyone who possesses the object code either (1) a

copy of the Corresponding Source for all the software in the

product that is covered by this License, on a durable physical

medium customarily used for software interchange, for a price no

more than your reasonable cost of physically performing this

conveying of source, or (2) access to copy the

Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the

written offer to provide the Corresponding Source. This

alternative is allowed only occasionally and noncommercially, and

only if you received the object code with such an offer, in accord

with subsection 6b.

d) Convey the object code by offering access from a designated

place (gratis or for a charge), and offer equivalent access to the

Corresponding Source in the same way through the same place at no

further charge. You need not require recipients to copy the

Corresponding Source along with the object code. If the place to

copy the object code is a network server, the Corresponding Source

may be on a different server (operated by you or a third party)

that supports equivalent copying facilities, provided you maintain

clear directions next to the object code saying where to find the

Corresponding Source. Regardless of what server hosts the

Corresponding Source, you remain obligated to ensure that it is

available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided

you inform other peers where the object code and Corresponding

Source of the work are being offered to the general public at no

charge under subsection 6d.

A separable portion of the object code, whose source code is excluded

from the Corresponding Source as a System Library, need not be

included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any

tangible personal property which is normally used for personal, family,

or household purposes, or (2) anything designed or sold for incorporation

into a dwelling. In determining whether a product is a consumer product,

doubtful cases shall be resolved in favor of coverage. For a particular

product received by a particular user, "normally used" refers to a

typical or common use of that class of product, regardless of the status

of the particular user or of the way in which the particular user

actually uses, or expects or is expected to use, the product. A product

is a consumer product regardless of whether the product has substantial

commercial, industrial or non-consumer uses, unless such uses represent

the only significant mode of use of the product.

"Installation Information" for a User Product means any methods,

procedures, authorization keys, or other information required to install

and execute modified versions of a covered work in that User Product from

a modified version of its Corresponding Source. The information must

suffice to ensure that the continued functioning of the modified object

code is in no case prevented or interfered with solely because

modification has been made.

If you convey an object code work under this section in, or with, or

specifically for use in, a User Product, and the conveying occurs as

part of a transaction in which the right of possession and use of the

User Product is transferred to the recipient in perpetuity or for a

fixed term (regardless of how the transaction is characterized), the

Corresponding Source conveyed under this section must be accompanied

by the Installation Information. But this requirement does not apply

if neither you nor any third party retains the ability to install

modified object code on the User Product (for example, the work has

been installed in ROM).

The requirement to provide Installation Information does not include a

requirement to continue to provide support service, warranty, or updates

for a work that has been modified or installed by the recipient, or for

the User Product in which it has been modified or installed. Access to a

network may be denied when the modification itself materially and

adversely affects the operation of the network or violates the rules and

protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided,

in accord with this section must be in a format that is publicly

documented (and with an implementation available to the public in

source code form), and must require no special password or key for

unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this

License by making exceptions from one or more of its conditions.

Additional permissions that are applicable to the entire Program shall

be treated as though they were included in this License, to the extent

that they are valid under applicable law. If additional permissions

apply only to part of the Program, that part may be used separately

under those permissions, but the entire Program remains governed by

this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option

remove any additional permissions from that copy, or from any part of

it. (Additional permissions may be written to require their own

removal in certain cases when you modify the work.) You may place

additional permissions on material, added by you to a covered work,

for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you

add to a covered work, you may (if authorized by the copyright holders of

that material) supplement the terms of this License with terms:

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terms of sections 15 and 16 of this License; or

b) Requiring preservation of specified reasonable legal notices or

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Notices displayed by works containing it; or

c) Prohibiting misrepresentation of the origin of that material, or

requiring that modified versions of such material be marked in

reasonable ways as different from the original version; or

d) Limiting the use for publicity purposes of names of licensors or

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e) Declining to grant rights under trademark law for use of some

trade names, trademarks, or service marks; or

f) Requiring indemnification of licensors and authors of that

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it) with contractual assumptions of liability to the recipient, for

any liability that these contractual assumptions directly impose on

those licensors and authors.

All other non-permissive additional terms are considered "further

restrictions" within the meaning of section 10. If the Program as you

received it, or any part of it, contains a notice stating that it is

governed by this License along with a term that is a further

restriction, you may remove that term. If a license document contains

a further restriction but permits relicensing or conveying under this

License, you may add to a covered work material governed by the terms

of that license document, provided that the further restriction does

not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you

must place, in the relevant source files, a statement of the

additional terms that apply to those files, or a notice indicating

where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the

form of a separately written license, or stated as exceptions;

the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly

provided under this License. Any attempt otherwise to propagate or

modify it is void, and will automatically terminate your rights under

this License (including any patent licenses granted under the third

paragraph of section 11).

However, if you cease all violation of this License, then your

license from a particular copyright holder is reinstated (a)

provisionally, unless and until the copyright holder explicitly and

finally terminates your license, and (b) permanently, if the copyright

holder fails to notify you of the violation by some reasonable means

prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is

reinstated permanently if the copyright holder notifies you of the

violation by some reasonable means, this is the first time you have

received notice of violation of this License (for any work) from that

copyright holder, and you cure the violation prior to 30 days after

your receipt of the notice.

Termination of your rights under this section does not terminate the

licenses of parties who have received copies or rights from you under

this License. If your rights have been terminated and not permanently

reinstated, you do not qualify to receive new licenses for the same

material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or

run a copy of the Program. Ancillary propagation of a covered work

occurring solely as a consequence of using peer-to-peer transmission

to receive a copy likewise does not require acceptance. However,

nothing other than this License grants you permission to propagate or

modify any covered work. These actions infringe copyright if you do

not accept this License. Therefore, by modifying or propagating a

covered work, you indicate your acceptance of this License to do so.

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Each time you convey a covered work, the recipient automatically

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A contributor's "essential patent claims" are all patent claims

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patent against the party.

If you convey a covered work, knowingly relying on a patent license,

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to copy, free of charge and under the terms of this License, through a

publicly available network server or other readily accessible means,

then you must either (1) cause the Corresponding Source to be so

available, or (2) arrange to deprive yourself of the benefit of the

patent license for this particular work, or (3) arrange, in a manner

consistent with the requirements of this License, to extend the patent

license to downstream recipients. "Knowingly relying" means you have

actual knowledge that, but for the patent license, your conveying the

covered work in a country, or your recipient's use of the covered work

in a country, would infringe one or more identifiable patents in that

country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or

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receiving the covered work authorizing them to use, propagate, modify

or convey a specific copy of the covered work, then the patent license

you grant is automatically extended to all recipients of the covered

work and works based on it.

A patent license is "discriminatory" if it does not include within

the scope of its coverage, prohibits the exercise of, or is

conditioned on the non-exercise of one or more of the rights that are

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work if you are a party to an arrangement with a third party that is

in the business of distributing software, under which you make payment

to the third party based on the extent of your activity of conveying

the work, and under which the third party grants, to any of the

parties who would receive the covered work from you, a discriminatory

patent license (a) in connection with copies of the covered work

conveyed by you (or copies made from those copies), or (b) primarily

for and in connection with specific products or compilations that

contain the covered work, unless you entered into that arrangement,

or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting

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otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or

otherwise) that contradict the conditions of this License, they do not

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covered work so as to satisfy simultaneously your obligations under this

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to collect a royalty for further conveying from those to whom you convey

the Program, the only way you could satisfy both those terms and this

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Notwithstanding any other provision of this License, you have

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section 13, concerning interaction through a network will apply to the

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EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF

SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided

above cannot be given local legal effect according to their terms,

reviewing courts shall apply local law that most closely approximates

an absolute waiver of all civil liability in connection with the

Program, unless a warranty or assumption of liability accompanies a

copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest

possible use to the public, the best way to achieve this is to make it

free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest

to attach them to the start of each source file to most effectively

state the exclusion of warranty; and each file should have at least

the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify

it under the terms of the GNU General Public License as published by

the Free Software Foundation, either version 3 of the License, or

(at your option) any later version.

This program is distributed in the hope that it will be useful,

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MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the

GNU General Public License for more details.

You should have received a copy of the GNU General Public License

along with this program. If not, see <https://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short

notice like this when it starts in an interactive mode:

<program> Copyright (C) <year> <name of author>

This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.

This is free software, and you are welcome to redistribute it

under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate

parts of the General Public License. Of course, your program's commands

might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school,

if any, to sign a "copyright disclaimer" for the program, if necessary.

For more information on this, and how to apply and follow the GNU GPL, see

<https://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program

into proprietary programs. If your program is a subroutine library, you

may consider it more useful to permit linking proprietary applications with

the library. If this is what you want to do, use the GNU Lesser General

Public License instead of this License. But first, please read

<https://www.gnu.org/licenses/why-not-lgpl.html>.

## Appendix E – The Open Source Definition

Source: <https://opensource.org/osd>

Opensource doesn't just mean access to the source code. The distribution terms of open-source software must comply with the following criteria:

1. **Free Redistribution**

The license shall not restrict any party from selling or giving away the software as a component of an aggregate software distribution containing programs from several different sources. The license shall not require a royalty or other fee for such sale.

1. **Source Code**

The program must include source code, and must allow distribution in source code as well as compiled form. Where some form of a product is not distributed with source code, there must be a well-publicized means of obtaining the source code for no more than a reasonable reproduction cost, preferably downloading via the Internet without charge. The source code must be the preferred form in which a programmer would modify the program. Deliberately obfuscated source code is not allowed. Intermediate forms such as the output of a preprocessor or translator are not allowed.

1. **Derived Works**

The license must allow modifications and derived works, and must allow them to be distributed under the same terms as the license of the original software.

1. **Integrity of The Author's Source Code**

The license may restrict source-code from being distributed in modified form only if the license allows the distribution of "patch files" with the source code for the purpose of modifying the program at build time. The license must explicitly permit distribution of software built from modified source code. The license may require derived works to carry a different name or version number from the original software.

1. **No Discrimination Against Persons or Groups**

The license must not discriminate against any person or group of persons.

1. **No Discrimination Against Fields of Endeavor**

The license must not restrict anyone from making use of the program in a specific field of endeavor. For example, it may not restrict the program from being used in a business, or from being used for genetic research.

1. **Distribution of License**

The rights attached to the program must apply to all to whom the program is redistributed without the need for execution of an additional license by those parties.

1. **License Must Not Be Specific to a Product**

The rights attached to the program must not depend on the program's being part of a particular software distribution. If the program is extracted from that distribution and used or distributed within the terms of the program's license, all parties to whom the program is redistributed should have the same rights as those that are granted in conjunction with the original software distribution.

1. **License Must Not Restrict Other Software**

The license must not place restrictions on other software that is distributed along with the licensed software. For example, the license must not insist that all other programs distributed on the same medium must be open-source software.

1. **License Must Be Technology-Neutral**

No provision of the license may be predicated on any individual technology or style of interface.

## Appendix F: Sources / Further Reading

<https://exygy.com/blog/which-license-should-i-use-mit-vs-apache-vs-gpl/#:~:text=The%20MIT%20license%20is%20if,legal%20ambiguity%20and%20patent%20trolls.>

<https://tldrlegal.com/license/apache-license-2.0-(apache-2.0)>

<https://en.wikipedia.org/wiki/Comparison_of_free_and_open-source_software_licences>

<https://opensource.guide/legal/>

<https://opensource.org/licenses/>

<https://medium.com/@moqod_development/understanding-open-source-and-free-software-licensing-c0fa600106c9>

[https://tldrlegal.com/license/mit-license](https://meet.google.com/linkredirect?authuser=2&dest=https%3A%2F%2Ftldrlegal.com%2Flicense%2Fmit-license)

[https://tldrlegal.com/license/apache-license-2.0-(apache-2.0)](https://meet.google.com/linkredirect?authuser=2&dest=https%3A%2F%2Ftldrlegal.com%2Flicense%2Fapache-license-2.0-(apache-2.0))

<https://www.kiuwan.com/blog/comparison-popular-open-source-licenses/>

<https://www.toptal.com/open-source/developers-guide-to-open-source-licenses>