Open License Guide - Source Code

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DISCLAIMER: This document reflects the policy objectives of the ITS JPO, specifically the ITS JPO Source Code Guidelines, and applies ONLY to research projects funded, either fully or partially, by the ITS JPO. This document may not be suitable for other U.S. DOT or non-U.S. DOT missions. For any questions or concerns regarding the applicability of this document or the ITS JPO Source Code Guidelines, please contact the ITS JPO at data.itsjpo@dot.gov.

For information concerning the assignment of open licenses to federally-funded custom-developed *data*, see the ITS JPO Data Access Guidelines and the Open License Guide - Data.

I. Introduction:

Assigning the proper license to source code is critical to enforcing and achieving public access and reuse for a project to maximize the ITS JPO's return on investment. Per the ITS JPO Source Code Guidelines, project teams must assign open licenses to federally-funded custom-developed source code. Open licenses ensure there are no restrictions on the use, disclosure, reproduction, preparation of derivative works, distribution of copies to the public, performance publicly and display publicly, in any manner and for any purpose, and to have or permit others to do so.[1]

II. Creative Commons Zero (CC0 1.0 Universal)

The ITS JPO requires the assignment of the Creative Commons Zero (CC0 1.0 Universal)[2] to all ITS JPO-funded custom-developed source code. The CC0 license waives any copyrights that may apply to the work and places it in the public domain. This license was selected due to its applicability to source code authored by both federal government employees[3] and non-federal government employees, its wide and accepted usage (used also by OpenFDA, 18f, and Project Open Data) and lack of requirements and restrictions that would impede reuse. The assignment of a license encourages reuse by placing prospective users on notice as to how they may use the source code.

Other open licenses, such as Apache 2.0, MIT, or GNU GPL are not the ITS JPO's top choices for licenses as they place restrictions on reuse and are not suitable for use by U.S. government employees since they require the author to grant a copyright license to users. Under Section 105 of the Copyright Act, when source code is authored by federal government employees, the government cannot claim a copyright to the work and by extension grant a copyright license.

Proprietary licenses where the owner reserves and restricts all rights, commonly requiring a fee for usage, should be avoided due to their conditions or restrictions. A project team considering the use of data or software assigned a proprietary license should consult their legal counsel.

These aforementioned licenses (Apache 2.0, MIT, GNU GLP, and proprietary licenses) place restrictions on reuse, including requiring that users provide attribution to the original author or requiring the assignment of the same license on copied or modified works. Restrictive open licenses reduce the ability of the public to freely use the work and accordingly, are not preferred over CC0 for works created by non-U.S. government employees (e.g. works created by contractors or grantees).

In the event that a project team objects to assigning the CC0 license, the ITS JPO may permit the assignment of the Apache 2.0 or MIT licenses on a case-by-case basis. These licenses, while not preferred over the CC0 license, include limited restrictions on reuse and are widely used and accepted as open licenses.

Project teams will retain existing licenses for any pre-existing software integrated into project solutions. In the event pre-existing software is used, the ITS JPO only requires that project teams assign CC0 to new federally-funded, custom-developed source code. Project teams must make all licensing relationships with pre-existing software clear in applications and documentation, including README and LICENSE files for associated source code.

The below chart provides additional guidance with regards to alternative licenses. For specific inquiries or clarification on other licenses, please contact the ITS JPO at data.itsjpo@dot.gov.

License Name	Permitted Status	Pros	Cons

Creative Commons Zero (CC0 1.0 Universal)	Permitted: **Default** license for all projects	• "Open License"[2]
		• Waives any or all copyright to the fullest extent of the law and places the work in the public domain
		  • Suitable for code authored by federal and non-federal employees
		• No requirements on users for reuse
		  • No attribution requirement
		  • Does not require license to be applied to a derivative work
		• Compatible with other open licenses since it does not impose any restrictions on further reuse
		• Does not preclude *recommending* attribution
		  • *Note:* The ITS JPO requires the use of issued DOIs and recommends users provide attribution
			• Does not explicitly include a patent waiver like some other licenses
			  • Although patents on source code are increasingly rare
			• Releases the work to the public domain which some project teams may be uncomfortable with
			  • *Note:* The ITS JPO can help clarify any concerns with CC0 at data.itsjpo@dot.gov.

Apache 2.0	Permitted: In certain cases (exceptions to Default)
	• Contact the ITS JPO at data.itsjpo@dot.gov if an exception is sought
		• Open License
		• Suitable for code authored by non-federal employees
			• Can never be used for code authored by federal employees
			• Places burden on reuse by requiring:
			  • Modified copies explicitly state the original file was changed
			  • Users of the original or derivative work be provided a copy of Apache 2.0

MIT	Permitted: In certain cases (exceptions to Default) • Contact the ITS JPO at data.itsjpo@dot.gov if an exception is sought	• Open License • Suitable for code authored by non-federal employees	• Can never be used for code authored by federal employees • Places burden on reuse by requiring: • A copyright and permission notice be included in all copies or significant copied portions of the source code

GNU General Public License; IBM Public License; Sun Microsystems License; CC-BY; and others with similar or more significant restrictions	Not Permitted: Except on a case by case basis
	• Contact the ITS JPO at data.itsjpo@dot.gov if an exception is sought
			• Many place significant burdens on reuse by requiring:
			  • Copyleft (i.e. derivative works apply the same license)
			  • No reuse in a proprietary work
			• Non-open licenses place even greater burdens on reuse by forbidding the creation of a derivative a work and/or public distribution of a work

Proprietary licenses, such as the Apple Software License; and others, with similar or more significant restrictions	Not Permitted: Except on a case by case basis
	• Contact the ITS JPO at data.itsjpo@dot.gov if an exception is sought
			• Proprietary licenses are those in which the owner reserves and restricts all rights, commonly requiring a fee for usage (licensing fee)
			  • The copyright holder specifies acceptable uses and privileges for the work
			  • Generally, the work can only be used for a specific purpose and cannot be modified or distributed

Recommend a License	• If there is a license not found on this list that a project team would like to use and appears to be compatible with the provisions found within the ITS JPO Source Code Guidelines, please reach out to the ITS JPO at data.itsjpo@dot.gov		

III. Assigning the License

Once a license is chosen, the project team - **NOT the ITS JPO** - is responsible for assigning the license. The open license should be assigned prior to or simultaneously with making source code available to the public (ex. creating a repository on GitHub).[4] The ITS JPO obtains rights to the source code, either via FAR 52.227-14 or 2 C.F.R. 200.315, then requires the project team to assign an open license once the project is made public. What license a project team will use should be agreed upon in the project contract, grant, or other funding agreement. The government must then hold the project team accountable for following through on this and other terms after award. Per this guide and the standard acquisition language used to implement the Source Code Guidelines, CC0 should be included in solicitation language by default, though an alternative license may be proposed and accepted in negotiation and final award.

When project teams place their source code in a source code storage system or repository, a corresponding LICENSE file must also be included with the full text of the open license along with a link to where the license is officially maintained (ex. CC0) per ITS JPO's Source Code Guidelines. While project teams may include licensing information in their README, a full separate LICENSE file must also be created and maintained. This is part of the standard acquisition language used to implement the Source Code Guidelines. If a project uses pre-existing software with existing licenses, the ITS JPO requires that project teams note this in the README and LICENSE file.

If a project maintains multiple repositories, all repositories must use the same license. If a project has a large number of sub-repositories linked to a master repository, project teams may include the full text of the license in the master repository and link to the master LICENSE file in sub-repository LICENSE files.

Most source code storage systems, including GitHub, have an option to automatically include licenses when creating a new repository. If your project is using or planning to use GitHub, see their guide to licensing a repository.

While CC0 does not require users of the source code to give attribution, it does not preclude authors from requesting attribution in copied, modified, or derivative works. As such, the ITS JPO recommends that project teams ask users for attribution in the README file, including a link to the original source code and reference to the original source code's Digital Object Identifier to easily track reuse.

IV. Reaping the Benefits of Open Licenses

Assigning an open license to federally-funded custom-developed source code is recommended by the Federal Source Code Policy and required by the ITS JPO. Beyond that, project teams benefit greatly from releasing their source code to the public and engaging in open development. Common benefits include, but are not limited to:

- Work not being 100% dependent on the author or organization that originally developed it. Users can modify and improve upon a project well after the project life cycle has ended.
- Higher return on investment for federally-funded work.
- Crowdsourcing ingenuity by allowing third-party users to contribute and make recommendations in real-time during and after development.
- Produces reliable, high-quality source code faster and cheaper than traditional methods by facilitating quality control and feedback from a potentially diverse user base.

V. Additional Resources

Want to learn more about open licenses? See the links to resources below or reach out to the ITS JPO at **data.itsjpo@dot.gov**.

- Timothy Vollmer, **Comment from Creative Commons #149 on Source Code Policy GitHub Page.** GitHub, April 11, 2016. https://github.com/WhiteHouse/source-code-policy/issues/149 .
- **Comparison of Free and Open Source Software Licenses**. Wikipedia. https://en.wikipedia.org/wiki/Comparison_of_free_and_open-source_software_licenses/.
- **The Copyright Act, 17 U.S.C. § 105**.
- Some content adapted from **The Legal Side of Open Source**. GitHub github.com/github/opensource.guide, used under the CC-BY-4.0 license.
- Vivian Deparday & Robert Soden, **Leveraging Open Source as a Public Institution.** World Bank Blogs, June 13, 2017. https://blogs.worldbank.org/opendata/leveraging-open-source-public-institution-new-analysis-reveals-significant-returns-investment-open.
- **Licensing a Repository**. GitHub. https://help.github.com/en/github/creating-cloning-and-archiving-repositories/licensing-a-repository.
- **M-16-21: Federal Source Code Policy: Achieving Efficiency, Transparency, and Innovation through Reusable and Open Source Software**. Office of Management & Budget, Executive Office of the President, August 8, 2016. https://sourcecode.cio.gov.
- **The Open Source Definition**. Open Source Initiative, March 22, 2007. https://opensource.org/osd.
- Dr. David A. Wheeler, **Publicly Releasing Open Source Software Developed for the U.S. Government**. Cyber Security & Information Systems Information Analysis Center, March 11, 2016. https://www.csiac.org/journal-article/publicly-releasing-open-source-software-developed-for-the-u-s-government/. *Originally published in* Software Tech News, Volume: 14, Number 1.
- **What are Open Standards?** OpenSource.com. https://opensource.com/resources/what-are-open-standards.
- **What is Free Software?** GNU Operating System. https://www.gnu.org/philosophy/free-sw.html.

Footnotes

[1] A vast array of open licenses exist, each with their own requirements and restrictions. While there is no one open license that is universally agreed upon, the ITS JPO adopts the Federal Source Code Policy's definition of "open source" and "free software" which are borrowed from the Open Source Initiative and Free Software Foundation respectively. The ITS JPO requires the use of licenses that best adhere to these definitions, namely, those which alleviate concerns of legal repercussions related to using source code and minimize burdens on reuse for users.

[2] While technically not a "license," Creative Commons Zero is a worldwide public domain dedication which satisfies the definition of "open license" and serves an identical purpose.

[3] When source code is created, generally that work is automatically covered by an exclusive copyright held by the source code's creator. Note that this does not apply to works created by the U.S. government, which cannot copyright a work. Due to this exclusive copyright by default, a non-U.S. government entity making a project publicly available alone does not make it open. Therefore, a suitable license such as CC0 must be assigned to a work in order to give others the permissions associated with "open source" and "free software."

[4] Waiting to assign a license until after the source code is made available to the public (even if the project is in its infancy) prevents collaboration, raises legal issues, and is contrary to the Source Code Guidelines