

# Proposal for changes to license tagging methods in LibreJS

Ruben Rodriguez <ruben@gnu.org>

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There are two independent license-related standards that are already impacting common practice for JS development, and that we can leverage by aligning LibreJS with them, and extending when necessary:

- SPDX has a list of unique short identifiers for software licenses. We can whitelist which of those identifiers LibreJS would accept.
- JSDoc is a standard for writing JavaScript documentation. It defines a format to add metadata to comments (usually headers for js files, or class/function definitions) that among other things allows to specify license and copyright information. It also defines an API and an example implementation of a parser and documentation-generator that could potentially be used as a library in LibreJS. It uses SPDX as its license identifier list.
- Source Maps is a standard for programatically listing the sources used for building aggregated scrips, in particular when they are minified or transcompiled from a different language. This overlaps with our WebLabels standard, although Source Maps does not contain licensing information.

## 1 License declaration as a comment at the beginning of a script

### 1.1 Declaration using short reference

#### Current schema

```
// @license [magnet-link] [human readable name of the license]
... [script is here] ...
// @license-end
```

#### Recommended changes

- Make the link optional, and not a magnet link. Links could be recognized from curated lists such as the license list at <https://www.gnu.org/licenses/license-list.html> or <https://spdx.org/licenses/>. We would continue to recognize legacy magnet links to prevent regressions.

- Replace *[human readable name of the license]* with *[SPDX License identifier]*. Note that the actual implementation has always been restricted to a specific list of identifiers, and not any human readable name as the spec suggests.
- Make *@license-end* optional. If not included, a *@license* tag will apply from that line to the end of the script, or to the next *@license* or *@license-end* tag. This would make LibreJS compatible with the JSDoc standard: <https://jsdoc.app/tags-license.html>
- Extend by supporting other optional license-related metadata:
  - **@author name [emailAddress]** already exists in JSDoc <https://jsdoc.app/tags-author.html>
  - **@copyright copyright\_text** already exists in JSDoc <https://jsdoc.app/tags-copyright.html>
  - **@origin [URL]** To contain a link to a software repository, so minimized scripts can refer to their source code. This one does not exist in JSDoc. The name could be something other than "origin".

## 1.2 Declaration using full/abridged license text

### Current schema

```
// @licstart
// Full/Abridged license text starts here
// ...
// license ends here
// @licend
```

### Recommended changes

- Continue to accept the current format for legacy support, but recommend from now on to use *@license* instead of *@licstart*. That would align LibreJS with JSDoc.
- Make *@licend* optional (JSDoc does not have it). It can be inferred from the end of the comment block.

## 2 License declaration as an XML/HTML tag

There is an existing method for defining a license by using tags and attributes, listed at <https://microformats.org/wiki/rel-license>. This method is used by (among others) Wikimedia foundation, which uses it to define the global license of a page, by means of tags like:

```
<link rel="license" href="//creativecommons.org/licenses/by-sa/3.0/">
```

There are two problems with basing the LibreJS implementation on this one:

- The existing usage is intended to represent the license of the page text, not the scripts used in it.
- The rel attribute can only be used in tags, so it could be used for whole documents (by omitting the href attribute, like in the previous example), or for external scripts, but not for in-line scripts.

Because of those limitations, I propose the use of *data-\** attributes (that is, any attribute starting with "data-" in its name) as defined in <https://www.w3.org/TR/2011/WD-html5-20110525/elements.html> because that type of attribute can be used on any tag.

## 3 Global license declaration for a page

### Current schema

This is currently done by placing an in-line script in the page, with this format:

```
// @licstart The following is the entire license notice for the
// JavaScript code in this page.
//
// Copyright (C) year Author
//
```

```
// [LICENSE TEXT]
//
//@licend The above is the entire license notice
//for the JavaScript code in this page.
```

Other than its size, one inconvenient of this method is that it requires this script to be the first to be listed in the page, which is not always something easy to do when the site is being produced by a framework or publication platform.

### Recommended changes

- Continue to allow for legacy support
- Recommend the use of a `<meta>` tag in the document header. Meta tags are usually at the very top of the document header, as common practice for frameworks or publication platforms.

```
<meta data-jslicense="spdx-identifier">
```

- The other optional license-related metadata mentioned earlier can be specified in the same way, by using "data-author", "data-copyright" and "data-origin", thus allowing for usage of minified scripts while still providing a link to the source code.

## 4 Setting the license on an in-line script

```
<script data-jslicense="spdx-identifier">
// Some code
</script>
```

## 5 Setting the license on an external script

```
<script data-jslicense="spdx-identifier" src="url" data-origin="url" />
```

## 6 License declaration as a WebLabels table

The current implementation of WebLabels as a HTML table is not optimal, as such tables are not easy to maintain, and the meaning of the three columns is not clearly shown to the visitors (e.g. <https://weblabels.fsf.org/www.gnu.org/CURRENT/>). A possible improvement would be to re-implement the system using JSON files, which would be much easier to generate and verify programmatically. It would also be easy to develop a script that, using a license.json file as a parameter, would display the list in a human-readable way.

Another problem that could be more easily addressed with a JSON format is listing aggregated scripts, which could be represented as a tree (a page containing multiple scripts that contain multiple aggregate sources). A good option would be to use the Source Maps format and extending it to contain licensing information, as allowed by the spec. Additionally, the Source Maps standard is also used for referencing the source code of WebAssembly and asm.js applications. Source Maps allow for the definition of new fields using the "x\_" naming convention, so our fields could be:

```
x_license : [SPDX_IDENTIFIER]
x_copyright:
```

...and so on.

As with SPDX and JSDoc there are existing, commonly used libraries that allow for the generation and parsing of Source Maps, simplifying the implementation on LibreJS.