Best licensing practices

Y. G. Grange¹, T. Jürges¹, J. Schnabel², N. P. F. Lorente³, and M. Füßling⁴

¹ASTRON, the Netherlands Institute for Radio Astronomy, Oude Hoogeveensedijk 4, 7991 PD Dwingeloo, The Netherlands; grange@astron.nl, jurges@astron.nl

²Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen Centre for Astroparticle Physics, Erwin-Rommel-Str. 1, 91058 Erlangen, Germany

³Australian Astronomical Observatory, 105 Delhi Road, North Ryde, NSW 2113, Australia

⁴DESY, D-15738 Zeuthen, Germany

Abstract.

The principle that research output should be open has, in recent years, been increasingly applied to data and software. Licensing is a key aspect to openness. Navigating the landscape of open source licenses can lead to complex discussions.

During ADASS XXIX in 2019 it became clear that several groups worldwide are working on formalising the licensing of software and other digital assets. In this article, we summarise a discussion we had at ADASS XXX on the application of licenses to astronomical scientific software, and summarise the questionnaire we distributed in preparation. We conclude that this topic is considered relevant and interesting by many members of our community, and that it should be pursued further.

1. Introduction

The application of the FAIR standards, as defined in (Wilkinson et al. 2016), to software makes the application of a license aiming to ensure reusability a core necessity.

A license defines the terms and conditions under which source code can be reused. If no license is applied, the reuse of source code is generally strongly limited due to copyright protection. Applying a license, and more specifically an open source license¹, facilitates making the source code reusable.

There are roughly three types of open source license:

Copyleft (e.g. GPL) – Allows reuse of code as long as any derived product is released under similar conditions. This extends to source code linking to a compiled library licensed under GPL.

¹In this paper, we use the term “Open Source” and “Open Source license” as they are defined at https://opensource.org/docs/osd
2. Questionnaire on use of licenses

Participants to the conference were asked to fill a questionnaire before or during the session. In total, 51 people responded. The questionnaire consisted of three multiple-choice questions, which we discuss in the following sections. The other two questions were used to provide input on the discussion, as summarised in Sec. 3, and to point out interesting resources for more information. We have added some of them to the extra material mentioned in Sec. 4.

2.1. What is the default license of your institute/collaboration w.r.t. to software?

The majority of institutes or collaborations adopted a default license (54.9%). The majority is distributed over 29.4% (permissive license is the default), 17.6% (copyleft license), 5.9% (lesser copyleft) and 2% (proprietary). Another 29.4% don't know whether a policy is present.

2.2. Is the license strongly enforced by the institute or collaboration?

The majority of respondents (64.7%) say that the license policy is not strongly enforced, while 13.7% tell that the policy is strongly enforced.

2.3. What license do you use for your (work related) software?

Figure 2. Overview of the answers to the question “What license do you use for your (work related) software?”. Percentages are indicated for each slice, with the corresponding absolute number in parentheses.

2.4. What license do you use for your (work related) software?

We added this question as one may know of a policy but still choose not to follow it. The percentages for all types of license are higher than in Fig. 1. The permissive license stands here out with 46.0%. 10% of participants do not use a license at all and another 10% does not use a specific license. These include participants stating they typically only contribute and therefore do not choose a license.

2.5. Conclusions from the questionnaire

2.5.1. Summary

The results of the questionnaire show that 86% of the participants license their code with open source licenses being the popular ones at about 76%. The community prefers permissive licenses at an institutional level (29.4%). At a personal level (46.0%) are in favour of permissive licenses. (Lesser) copyleft licenses are also popular at 23.5% of institutes and 30.0% of collaborations. A majority of the participants is aware of a policy (54.9%), of those (64.3%) follow it. A large fraction of participants (64.7%) say that policies are not strongly enforced.

2.5.2. Conclusion

Looking at the numbers where a default license is in place (54.9%), and people actually applying that license (35.3%) we conclude that a policy can be effective or at least inspire people to actually apply the advised license.

3. Main topics of discussion

The discussion was kicked off with the presentation of two views on the topic of licensing source code:
Australian Astronomical Observatory: Over the years the AAO has moved between licenses during several organisational restructurings.

Cherenkov Telescope Array: Early on in the project the CTA consortium made a very conscious choice for a permissive license.

We invited participants to contribute topics for discussion. We asked the attendance to prioritise the five main topics by a vote at the beginning of the session. With 53 votes cast, the most pressing issues were identified (with weight \( w \)) as

1. How to choose a license? \( w = 0.4 \)
2. What to do if licenses in projects/collaborations do not mix? \( w = 0.3 \)
3. What to do if licenses are not respected? \( w = 0.25 \)
4. Good reasons for (open) licenses \( w = 0.2 \)

During the discussion the following subjects were identified as being in need of additional information and strategies:

- How to work with legacy software without clear licensing?
- Who should decide the type of license and how to mention the authors?
- How to deal with patents and include companies in software projects?

The numbers support that people want to get advice on how to pick the right license for their case, especially in the light that a software publication and citation of it can be helped by a license (Teuben et al. 2021). It was recognised that the license for a software project should be chosen early because a relicensing of code becomes more time consuming the older a project’s source code grows and the more people contribute. This is due to the simple fact that relicensing requires the consent of a source code’s copyright holder. In part, this can be avoided by using contributor license agreements to aggregate copyright to a central legal entity.

4. Prospects for future work

The main conclusion from the session is that the topic is very relevant to the community and the wish for a common approach exists. As a starting point, we created a knowledge base at https://escape2020.pages.in2p3.fr/wp3/licensing/ which contains the materials presented at the session, slides with additional information and the results of the survey. It will be expanded in the context of the ESCAPE project.

References

Grange, Y. G., Jürges, T., Dijkema, T. J., Halfwerk, R., & Schoonderbeek, G. W. 2019, arXiv e-prints, arXiv:1911.00534, 1911.00534

Teuben, P., Allen, A., & Berriman, G. B. 2021, in ADASS XXX, edited by J.-E. Ruiz, & F. Pierfederici (San Francisco: ASP), vol. TBD of ASP Conf. Ser., 999 TBD

Wilkinson, M. D., et al. 2016, Scientific Data, 3, 160018