Final Report from the Task Force on Open Source Software Licence at CERN

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Main Volume

Following a proposal by the editor of this report, in March 2011 the Heads of FP Department and IT Department, recognizing that the situation regarding Open Source Software licensing at CERN needed clarification, created the Open Source Licence Task Force (OSL Task Force) to formulate recommendations on which licence should be used for software developed at CERN.

*This document is the **Main Volume** of the final report of the OSL Task Force.*

It is complemented by a separate Volume of Annexes.

Contents

Executive summary

The OSL Task Force received the mandate to *formulate recommendations on which licence(s) should be used for which class of software developed at CERN.* In response, the Task Force has produced this document and the recommendations set out herein.

- **Summary of Recommendations**:

  These recommendations are consistent with the CERN Convention, the CERN Policy on the Management of Intellectual Property in Technology Transfer Activities and the Open Access Policy for publications.

  1. Whenever possible, software owned in whole or in part by CERN should be made available as **Open Source**.
  2. Exceptions to Open Source licensing may be considered in two main scenarios (section 2.2).
  3. Any software owned in whole or in part by CERN must contain in the notice a statement acknowledging (i) the **copyright of CERN** and other copyright owners as applicable; (ii) the **applicable licence**, and (iii) **CERN's special status** as an Intergovernmental Organization (section 4.1).
  4. The Open Source licences used for CERN-owned software should be widely used licences approved by the **Open Source Initiative** (OSI).
  5. Four classes of software owned in whole or in part by CERN have been identified. Which Open Source licence to use depends upon (i) whether the software was developed solely by CERN or in collaboration with partners and, (ii) whether it makes use of third-party software.
     a. For software developed solely by CERN, the *default* licence, a "**Copyleft**" licence: **GPLv3** is to be used whenever possible. An *alternate* licence, a "**Permissive for Inclusion**" licence: **LGPLv3** may be used for special cases such as program libraries when the prime objective of the Open Source distribution is the rapid wide-spread adoption of these programs. An *exception* licence, a "**Permissive for Inclusion and Modification**" licence: **Apache v2** may be used when constraints are imposed on the development of the software by existing agreements, such as an external funding body, or when no control over the possible commercial exploitation of the program by third parties is necessary. If the software makes use of third-party software, the case will be analyzed by the CERN Knowledge Transfer Legal Officer, who may propose a different licence in case of licence incompatibilities.
     b. For software developed by CERN in collaboration with other partners, CERN should propose to its partners to apply the above policy. If no agreement is reached on one of CERN recommended licences, CERN may negotiate with its partners another licence[1]. Such licence may be a "Permissive for Inclusion and Modification" licence, if considered in the interest of CERN and of the collaboration as a whole
  6. For software developed by CERN in collaboration with other partners, whenever possible, a **Collaboration Agreement** should be established at the inception of the collaborative project, specifying the software licence to be used and the governance mechanisms of the collaboration (section 4.4).
  7. A decision making process is proposed for choosing an Open Source licence (section 4.5).
  8. These recommendations are limited to the mandate received by the OSL Task Force. If they are accepted, the creation of a permanent structure to deal with Open Source Software matters is proposed (section 5).

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[1] Provided (i) it does not contain a clause attributing jurisdiction to a specific court, and (ii) it is approved by the Open Source Initiative (OSI)

- **Rationale of the Recommendations**

  o The Open Source principles encourage the creation of open communities and collaborations of users invited to improve and complement the software and share their enhancements with the entire community. This accords with the historical CERN collaborative spirit and maximizes the in-kind return to CERN. In substance, this recommendation promotes the concept of *collaborative dissemination* (section 4.3.1).

  o The philosophy of Copyleft licences may be summarized as follows: "*As a User (the Licensee) of the licensed software, you cannot redistribute the original or a derivative work with fewer rights than the ones you yourself received*". As a consequence, since an Open Source user receives the source of the software, then the user must, in turn, provide the source of any modified version. As a derivative work must be distributed under the same licence, Copyleft licences are said to ensure the non-appropriation by third-parties of the Open Source software (section 3.1 and 4.3.1).

    o The Copyleft philosophy fits best with CERN scientific philosophy and tradition.
    o The Open Hardware Licence adopted by CERN in the spring 2011 is a fully Copyleft licence.
    o By preventing appropriation by third-parties, Copyleft licensing encourages sharing but also allows more control over the possible commercial exploitation through dual licensing of CERN software.
    o The European Commission defends the sharing philosophy of Copyleft licences, in particular for public administrations. To this end, it has developed and is promoting the European Union Public Licence (**EUPL**), which has been adopted by several national public administrations.

  o **GPLv3** is recommended as Default licence at the present time (as the last version of the most widely-used Copyleft licence). GPLv3 has a number of more modern features than its predecessor GPLv2, including compatibility with Apache v2.

  o Although **EUPLv.1.1** is a promising, modern, flexible and easy to use Copyleft licence (section 4.3.4 and Volume of Annexes section 1.5) it is currently not compatible with CERN's status as an Intergovernmental Organization. It is recommended that CERN approach the European Commission on a possible change of the licence, to make it compatible with the particular legal status of Intergovernmental Organizations.

- **The Volume of Annexes**

  o The Volume of annexes provides three categories of information: Background educational and reference material on Open Source Licensing; Material for practical implementation of the recommendations; The analysis of the current situation of Open Source Software licensing at CERN, which motivated the creation of the OSL Task Force.

  o The material for practical implementation of the recommendations contains:

    o The Draft Form to document software cases submitted for Open Source distribution
    o The Instruction Note for specifying the licence terms in Open Source software

1   Background

- The current situation regarding the Open Source Software licence(s) to be used for software owned by CERN is unclear and complex:
  - The existing document (FC/4920, March 2005) is not useful in practice as a) the recommended CERN-specific licence did not receive the approval of the Open Source Initiative (OSI) authority, and b) the prohibition on Copyleft licences needs to be reconsidered in view of more recent developments at CERN.
  - The result of this complexity is a *de facto* widespread use of different licences, ranging from strong Copyleft licences (e.g. GPL) to fully permissive licences (e.g. Apache),[2] often without objective reasons, and a frequent lack of consideration for intellectual property (IP) (e.g. copyright statements sometimes omitted, or reference made to entities with no legal personality).
  - The situation is further complicated by the fact that software developed by CERN often makes use of third-party modules with their own use conditions and is frequently developed in collaboration with external partners.

- The OSL Task Force received the following mandate: *"The Open Source Licence Task Force is a duration-limited and mandate-limited group tasked to formulate recommendations on which licence(s) should be used for which class of software developed at CERN. The term "licence" covers the ownership statement (© xxx), the distribution conditions and the liability/disclaimer/warranty statements. The deliverable should be a short document complemented by a short Annex on the rationale of the recommendation(s)"*. In response thereto, the Task Force has produced this document and the recommendations set out herein.

- These recommendations are consistent with the CERN Convention[3], the CERN Policy on the Management of Intellectual Property in Technology Transfer Activities[4] and the Open Access Policy for publications[5].

  The philosophy of openness at CERN is enshrined in the Convention, which states that "*the results of its experimental and theoretical work shall be published or otherwise made generally available*".

  Thus, the technology transfer policy states that the priority for CERN is "*maximizing the dissemination and visibility of technologies*" ahead of generating revenue[6]. This dissemination policy is reflected by the preference for an Open Source approach for CERN-owned software: "*For software developments that are owned in whole or in part by CERN, CERN favors the Open Source approach. Exceptions can be made where there is a good reason not to put the software development under Open Source conditions at a given time. Alternatively a dual licensing scheme can always be considered[7]*."

  Similarly, as regards the policy for its publications, CERN has been a leader in the Open Access movement. All LHC collaborations actively promote publication of their results under Open Access conditions. CERN retains copyright and strives for licences that allow the widespread dissemination and re-use, such as the Creative Commons Attribution ("cc by") licence.

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[2] See section 3 below for an explanation of the difference between copyleft and permissive licences.
[3] The Convention for the establishment of a European Organization for Nuclear Research (1953)
[4] FC/5434 (17 March 2010) **"***Policy on the management of intellectual property in technology transfer activities at CERN*".
[5] https://ph-dep.web.cern.ch/ph-dep/ScientificActivities/Preprints/EPPublishingPolicy.html
[6] "Use of *technology transfer* practices that maximise the *dissemination* and visibility of *technologies*. In cases where revenue generation and *dissemination* conflict, the priority is given to *dissemination*." (CERN Policy on the Management of Intellectual Property in Technology Transfer Activities, section 1.2)
[7] CERN Policy on the Management of Intellectual Property in Technology Transfer Activities, section 4.1.5

2   Recommendations

1. Whenever possible, software owned in whole or in part by CERN should be made available as Open Source. Software owned in whole or in part by CERN includes:

   a)   software that results from, or is substantially based on, a member of the personnel's activities within the Organization or on its behalf, except as may be otherwise stipulated by the Organization in its agreements and memoranda of understanding[8],

   b)   software developed in the framework of an agreement which defines the resulting IP as solely or co-owned by CERN;

   c)   software developed in the framework of a purchasing contract to which the CERN General Conditions of Contract apply.

2. Exceptions to Open Source licensing may be considered in two main scenarios:

   A-   No distribution at all:

      1. A substantial effort is required to appropriately package the software for public release, and it is considered that this effort significantly exceeds the expected benefits of Open Source distribution;
      2. The quality of the software (in terms of performance, reliability, functionality and programming) is considered insufficient, and its public exposure risks to convey a negative image of CERN.

   B-   Non-Open Source distribution:

      1. Existing collaborative agreements or external constraints, for example such as those imposed by funding bodies, prevent Open Source distribution;
      2. The specific circumstances of a collaboration require *ad hoc* non-Open Source licensing conditions;
      3. Based on a thorough analysis of the case, a non Open Source approach is considered more effective for maximising dissemination.

3. Notwithstanding the licence, which defines the conditions of use, or the Class of software being considered, any software owned in whole or in part by CERN must contain in the notice a statement acknowledging (i) the copyright of CERN and other copyright owners as applicable; (ii) the applicable licence, and (iii) CERN's special status as an Intergovernmental Organization[9]:

   Example:

   © *Copyright [year] CERN [and other copyright owner as applicable]. This software is distributed under the terms of the GNU General Public Licence version 3 (GPL Version 3), copied verbatim in the file "COPYING". In applying this licence, CERN does not waive the privileges and immunities granted to it by virtue of its status as an Intergovernmental Organization or submit itself to any jurisdiction.*

4. The Open Source licences used for CERN-owned software should be widely used licences approved by the Open Source Initiative (OSI).

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[8] Based on section S I 5.01 of the Staff Rules and Regulations (as proposed for the next revision of the CERN Staff Rules and Regulations), which applies to all categories of the members of the personnel defined in section S I 2.01, including associated members of the personnel.

[9] See section 4.1 below.

5. Four classes of software owned in whole or in part by CERN have been identified. Which Open Source licence to use depends upon (i) whether the software was developed solely by CERN or in collaboration with partners and, (ii) whether it makes use of third-party software[10]. Summary of the recommendations for each class of software follows:

	SW developed **solely by CERN**	SW developed by CERN in **collaboration** with other partners
SW making **no** use of, nor based on, third-party SW	Class 1	Class 2
	Default **GPLv3** Copyleft Licence	CERN to propose Class 1 options to partners
	Alternate **LGPLv3** Permissive for Inclusion *(Special cases such as libraries)*	Decide case by case in case CERN Class 1 options not accepted
	Exception **Apache v2** Permissive for Inclusion and Modification *(Special cases such as project with external constraints)*	
SW making use of, or based on, third-party SW	Class 3	Class 4
	Class 1 options in case of licence compatibility	CERN to propose to partners Class 1 options In case of licence compatibility
	Decide case by case in case of licence incompatibility	Decide case by case in case of licence incompatibility or Class 1 options not suitable

For Class 1: **Software developed solely by CERN and making no use of third-party software**
1. The *default* licence, a "**Copyleft**" licence: **GPLv3** (Gnu General Public Licence Version 3). This licence is to be used whenever possible.
2. An *alternate* licence, a "**Permissive for Inclusion**" licence: **LGPLv3** (Gnu Lesser General Public Licence Version 3). This licence may be used for special cases such as program libraries when the prime objective of the Open Source distribution is the rapid wide-spread adoption of these programs.
3. An *exception* licence, a "**Permissive for Inclusion and Modification**" licence: **Apache v2.** This licence may be used when constraints are imposed on the development of the software by existing agreements, such as an external funding body, or when no control over the possible commercial exploitation of the program by third parties is necessary.

For Class 2: **Software developed by CERN in collaboration with other partners and making no use of third-party software**
a. CERN should propose to its partners to apply the Class 1 policy.
b. If no agreement is reached on one of CERN recommended licences, CERN may negotiate with its partners another licence provided (i) it does not contain a clause attributing jurisdiction to a specific court, and (ii) it is approved by the Open Source Initiative (OSI). Such licence may be a "Permissive for

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[10] In this report, "third-party software" means software not owned in whole or in part by CERN.

Inclusion and Modification" licence, if considered in the interest of CERN and of the collaboration as a whole.

For Class 3: **Software developed solely by CERN and making use of third-party software**
- The Class 1 policy should be applied whenever possible..
- Each case will be analyzed by the CERN Knowledge Transfer Legal Officer, who may propose a different licence in case of licence incompatibilities.

For Class 4: **Software developed by CERN in collaboration with other partners and making no use of third-party software**
The policy of Classes 2 and 3 should be applied.

6. **For Classes 2 and 4**, whenever possible, a Collaboration Agreement should be established at the inception of the collaborative project, specifying the software licence to be used and the governance mechanisms of the collaboration. In such collaborative projects, if the contribution from CERN is modest, CERN may consider it preferable to transfer the ownership of the copyright of its contribution to one of the partners in the collaboration.

7. The following decision making process is recommended for choosing an Open Source licence (section 4.5):
    a. The author(s) of the software and their supervisor(s) (Section and Group leader) discuss and document the case, indicating precisely, if applicable, the nature and the mode of use of any third-party software.
    b. They submit the case to the Departmental Knowledge and Technology Transfer Officer (DKTO), who verifies the case is properly documented and provides advice as appropriate on the licence to be used.
    c. The DKTO transmits the case to the CERN KT Legal Officer for validation of the chosen licence, after verification of the licence compatibility and discussion with the author(s) and/or supervisor(s) as appropriate.
    d. The CERN KT Legal Officer informs the DKTO of the result of the case examination.
    e. The author includes a statement, as described in 4.1 below, in each source file of the software.

8. These recommendations are limited to the mandate received by the OSL Task Force. If they are accepted, the creation of a permanent structure to deal with Open Source Software matters is proposed (see section 5).

3   Key properties of the recommended licences

In determining the licences to recommend, the OSL Task Force analysed a selection of licences that are OSI-approved, widely used, and, with the exception of EUPL, compatible with the status of CERN as an intergovernmental organization.

Open Source licences may be classified in three different categories:
1. The Copyleft licences (sometimes called "strong Copyleft licences")
2. The Permissive for Inclusion licences (sometimes called "weak Copyleft licences")
3. The Permissive for Inclusion and Modification licences (sometimes called "non-Copyleft licences")

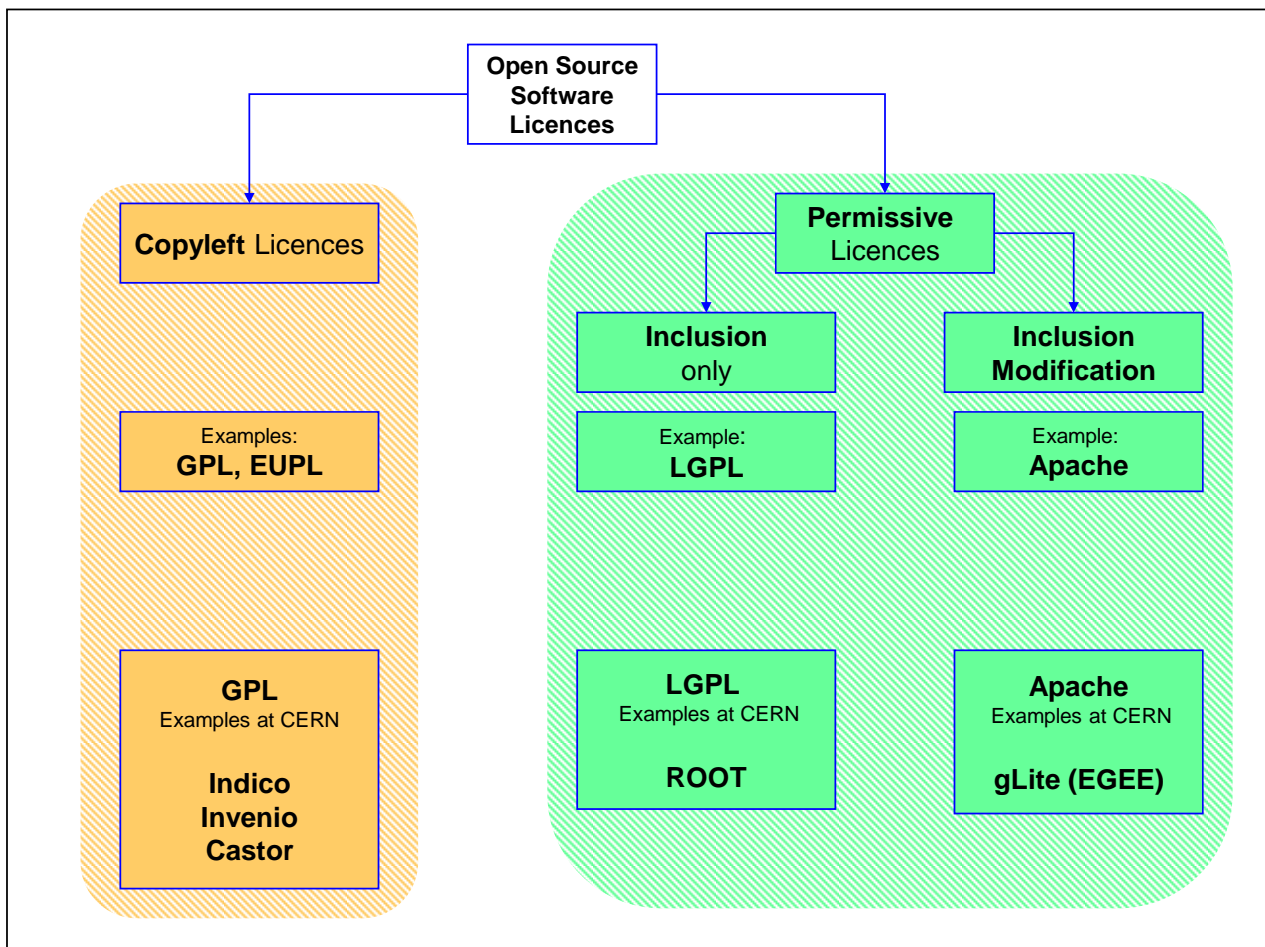This table provides examples of such licences and cases of use at CERN.

Figure 1: Main categories of Open Source licences and examples of use at CERN

3.1   Copyleft licences

Free Software

The Copyleft principles were laid down by the Free Software Foundation (FSF) which was at the inception of the Open Source Software (OSS) movement with the GPL and later the LGPL licence. The FSF has published the Free Software Definition[11].

GPL and EUPL (Copyleft), LGPL (Permissive for Inclusion) and Apache v2 (Permissive for Inclusion and Modification) are all examples of Free Software.

Philosophy of Copyleft licences

The philosophy of Copyleft licences may be summarized as follows: "*As a User (the Licensee) of the licensed software, you cannot redistribute the original or a derivative work with fewer rights than the ones you yourself received*".

As a consequence, since an Open Source user receives the source of the software (with the rights to redistribute, include or modify it), then the user must also, in turn, provide the source of the software itself and of any modified version. There is no obligation for the user to provide the source of his derivative if he does not distribute it to any third party but creates a work solely for his own use.

As a derivative work must be distributed under the same licence, Copyleft licences are said to ensure the non-appropriation by third-parties of the Open Source software.

Open community spirit

As Open Source Software in general, the spirit behind a Copyleft licence is the creation of an open community of users or developers where the licensees are encouraged not only to improve, correct, complement and integrate the software they receive but also to make available these enhancements to the entire community. The difference between copyleft and non-copyleft licences is that users cannot take the Open Source Software and turn it into proprietary software, thus preventing any member of this open community to depart from the principles of reciprocal contribution.

Note that "Free software" does not mean "non-commercial." A Copyleft program is available for commercial use, commercial development, and commercial distribution. Companies may sell copies or services associated with the Free Software, provided they maintain the freedom of the user to copy and change it.

Commercial Exploitation

Any software distributed under a given licence may also be distributed under one or more different licence(s). This is often referred to as dual or multiple licensing.

A frequent case of dual licensing is the public release of a programme under a Copyleft licence (such as GPL) and, contemporaneously, a bilateral agreement between the programme owner and a third party company for the commercial exploitation of the software.

3.2   Special Copyleft licences (Interoperable-Copyleft)

As Copyleft licences require that combined or derivative works be distributed under the same licence, this may pose compatibility issues when combining programmes released under different Copyleft licences.

To overcome this difficulty, a new variant of Copyleft licences, called "Interoperable-Copyleft licences" or "IC Licences" was recently designed.

The chief example of Interoperable-Copyleft licences is the EUPL licence, which provides an explicit list of compatible Copyleft licences (that is, a programme distributed under one of the compatibility list licences may be combined with a EUPL programme and the resulting collective work be distributed under the compatible licence, rather than EUPL).

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[11] See the Volume of Annexes for details.

3.3   Permissive for Inclusion licences

Philosophy of Permissive for Inclusion licences

Such licences are sometimes called "Permissive in composition" licences.

They typically follow the same rules as Copyleft licences except that the user may include, unmodified, the Open Source Software in a larger programme and release the larger work under a licence different from the initial Open Source licence.

LGPL is the most widely used Permissive for Inclusion licence.
The chief consequence of the permission for inclusion is that the user is not obliged to provide the full source code of its larger work.

Note also that:
- if the user has modified the LGPL licensed software and wishes to publicly release this modified version or any work that incorporates it, the work must be distributed under the LGPL licence.
- the user cannot redistribute the unchanged LGPL software under another licence.

Targeted software of Permissive for Inclusion licences

Permissive for Inclusion licences such as LGPL target libraries of software, which are indeed designed to be incorporated unchanged into larger programmes. LGPL is also frequently used for non-library software when there is a particular concern from the licensor that the obligation to release the source of a work incorporating unchanged the GPL-licensed software would seriously hamper its wide adoption.

As with Copyleft licences, Permissive for Inclusion licences, which prevent modified versions from being distributed under a proprietary licence, are intended to ensure the non-appropriation by third parties of the Open Source software.

3.4   Permissive for Inclusion and Modification licences

Philosophy of Permissive for Inclusion and Modification licences

Such licences are sometimes called "Permissive in composition and derivation" licences.

Such licences allow the distribution under a different licence of any work incorporating the Open Source Software as well as of any modified versions or any work incorporating modified versions. This different licence may be a proprietary licence.

Apache v2 is one of the most widely used Permissive for Inclusion and Modification licence.

The only obligations for the licensee of Apache-licensed software are to respect certain conditions for perpetuating the initial IP statements and listing the modifications.

Third-party appropriation with Permissive for Inclusion and Modification licences

As any user may modify the Apache-licensed software and distribute the resulting work under a proprietary licence, Apache, unlike GPL, EUPL and LGPL, is said to permit the appropriation by third-parties of the Open Source software.

Commercial Exploitation

As all permissions for appropriation have been given to any third party, including to commercial companies, commercial exploitation by dual licensing becomes less interesting. This is in contrast with Copyleft and Permissive for Inclusion licences.

4   Rationale of the recommendations

4.1   Statement acknowledging the copyright, applicable licence and status of CERN

Any CERN software owned in whole or in part by CERN must contain a statement in the header of each source file acknowledging (i) the copyright of CERN and other copyright owners as applicable; (ii) the applicable licence, and; (iii) CERN's special status as an Intergovernmental Organization.

(i)   Copyright
The following copyright statement must be included, depending on whether the software is owned solely by CERN or by CERN and external partners:

- "© Copyright [year] CERN"
    for software owned solely by CERN

- "© Copyright [year] CERN [for the benefit of the [Name of appropriate group] Collaboration]"
    for software developed by a collaboration but owned by CERN

- "© Copyright [year] CERN and [name of other copyright holders]"
    for software owned by CERN and external partner(s) in small collaborations

- "© Copyright [year] Copyright Holders of [name of the collaboration or joint project]. See [https://link] for details of the Copyright Holders"
    for software owned by CERN and external partners in large collaborations

(ii)   Applicable licence
The following licence statement must be included (following the copyright statement):

- "This software is distributed under the terms of the GNU General Public Licence version 3 (GPL Version 3), copied verbatim in the file "COPYING" /copied verbatim below".
    For software distributed under the default GPL v.3.

- "This software is distributed under the terms of the GNU Lesser General Public Licence version 3 (LGPL Version 3), copied verbatim in the file "COPYING" /copied verbatim below".
    For software distributed under the alternate LGPL v.3.

- "This software is distributed under the terms of the Apache version 2 licence, copied verbatim in the file "COPYING" /copied verbatim below".
    For software distributed under the exception Apache licence version 2.

The verbatim text of the licence should be copied
- either in a dedicated file part of the distribution, usually called COPYING (NB: another name may be chosen)
- or directly below the licence statement.

The text of each licence to be copied verbatim is available in the Volume of Annexes.
In the case of LGPL, the text comprises the LGPL text per se followed by the GPL text. This is due to the fact that the LGPL licence is written as a modification of the GPL text. The author must copy the entire text below in the cased of LGPL.

(iii)   Acknowledgement of the status of CERN as an Intergovernmental Organization

As an Intergovernmental Organization, CERN has international legal status and benefits from the privileges and immunities that governments grant to Intergovernmental Organizations to facilitate their functioning without undue interference by individual States. In the case of CERN, this status and these privileges and immunities are laid down

in CERN's founding Convention[12], the Host State Agreements[13] and the Protocol on the privileges and immunities of the European Organization for Nuclear Research (2004).

Included in these legal instruments is immunity from jurisdiction of the courts. In exchange, CERN is under an obligation to settle its disputes with private parties by other means, such as arbitration, and CERN therefore includes an arbitration clause in its contracts.

Some OSI licences do not address the question of jurisdiction at all; others (such as the EUPL v.1.1, see article 14) grant jurisdiction for the settlement of disputes concerning the licence to a specified court.

For CERN to follow its normal practice of including an arbitration clause (in the case where the OSI licence does not address jurisdiction) or of amending the jurisdiction clause (in the case where the OSI licence attributes competence for dispute resolution to a court) would be problematic. Changes to OSI licences may only be made where the existing licence text permits modification. Moreover, such changes would undermine the usability of the licence as a recognized standard within the software community.

For the OSI licences that do not define jurisdiction, CERN shall limit itself to clarifying in the copyright and licence notice the following:

"In applying this licence, CERN does not waive the privileges and immunities granted to it by virtue of its status as an Intergovernmental Organization or submit itself to any jurisdiction."

This approach does not work for OSI licences that include a clause attributing jurisdiction to a specific court (such as EUPL v.1.1) since there could be a risk of a conflict between that clause and the statement CERN does not "*submit itself to any jurisdiction*". Therefore, OSI licences that attribute jurisdiction to specific courts may not be selected by CERN.

4.2   The need for widely-used OSI-approved Licences

The Open Source Initiative (OSI), a non-profit corporation formed to educate about and advocate for the Open Source movement and now acting as a standards body, has published the Open Source Definition (OSD) which specifies the criteria with which the distribution terms of software must comply in order to qualify as Open Source. They include provision for free distribution; availability of source code; possibility of derived works; and, no discrimination against persons, groups or fields of endeavour[14].

As a standards body, the OSI is recognised by the community as the authority to maintain the OSD and to deliver the Open Source label of conformity with the OSD. Licences granted the OSI label are called OSI-approved licences.   However, not all licences comply with the OSD request or receive the approval. Indeed, a key consideration by OSI is to avoid multiplication of similar or duplicative licences. As a matter of fact, there are already approximately 70 OSI-approved licences, and it has become rare to propose a new OSD-compatible licence which would be significantly different from an existing approved licence.

In 2001, CERN submitted its own Open Source licence for use in the European DataGrid Project to OSI and, hence, the EU DataGrid Software Licence, a permissive non-copyleft licence, received the OSI stamp of approval. A few years later, in 2004, CERN requested for the EGEE project the approval of another new fully permissive licence. That time the request was not accepted and the EGEE Project used instead an existing similar OSI-approved licence (Apache v2).

The objective of Open Source distribution is generally to facilitate the use, adoption and modification of the software by licensees. The terms of use and distribution must be carefully analyzed by legal experts of the licensees. These legal experts typically have a good knowledge of the most popular OSI-approved licences. However, they are increasingly reluctant to analyze non-OSI-approved licences or even less popular OSI-approved licences.

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[12]   The Convention for the establishment of a European Organization for Nuclear Research (1953)

[13]   Agreement between the Swiss Federal Council and the European Organization for Nuclear Research concerning the legal status of that Organization in Switzerland (1955), and Agreement between the Government of the French Republic and the European Organization for Nuclear Research concerning the legal status of the said Organization in France (1973).

[14]   See the Volume of Annexes for details.

In order to limit not only the proliferation of approved licence but also to focus the use of approved licences to a reduced set, the OSI has categorized the licences. One of the categories, "popular and widely used or with strong communities licences", lists nine OSI approved licences[15].

As a result, licences recommended by the OSL Task Force are all widely used OSI-approved licences.

4.3   Rationale for the choice of each OSI-approved Licence

4.3.1 Rationale for default Copyleft licensing

The OSL Task Force recommends the use at CERN of a Copyleft licence as the default for Class 1 software and to consider it or to propose it to partners for, respectively Class 3 and Class 2/Class 4 software.

The rationale for this recommendation is:

1. The Open Source principles encourage the creation of open communities and collaborations of users invited to improve and complement the software and share their enhancements with the entire community. This accords with the historical CERN collaborative spirit and maximizes the in-kind return to CERN. In substance, this recommendation promotes the concept of *collaborative dissemination*.

2. The Copyleft philosophy fits best with CERN scientific philosophy and tradition..

3. The Open Hardware Licence adopted by CERN in the spring 2011 is a fully Copyleft licence.

4. By preventing appropriation by third-parties (i.e. preventing the licensing of work derived from CERN software under proprietary licences), Copyleft licensing not only encourages sharing but also allows more control over the possible commercial exploitation through dual licensing of CERN software. Such control would not be possible with a non-Copyleft licence.

5. It is interesting to note that the European Commission defends the sharing philosophy of Copyleft licences, in particular for public administrations[16]. To this end, it has developed and is promoting the European Union Public Licence (EUPL), which has been adopted by several national public administrations.[17]

As *default* licence, the OSL Task Force recommends GPLv3 at the present time (as the last version of the most widely-used Copyleft licence). GPLv3 has a number of more modern features than its predecessor GPLv2, including compatibility with Apache v2.

4.3.2 Rationale for alternate Permissive for Inclusion licensing

The OSL Task Force proposes that for Class 1 software, an *alternate* Permissive for Inclusion licence be used for special cases such as program libraries when the prime objective of the Open Source distribution is the rapid wide-spread adoption of these programs. It also recommends to consider it or to propose it to partners for respectively Class 3 and Class 2/Class 4 software if the default licence turns out to be unsuitable for compatibility or political reasons.

Indeed, there are well indentified cases at CERN where libraries of software or small modules have been truly designed to be incorporated unchanged into larger programmes including outside CERN. Obliging the licensees to publish the source of their work after inclusion of the CERN components may severely limit the adoption of such libraries or modules by users.

Furthermore, insofar as the CERN components themselves are not modified by the licensee (that is, no improved or enhanced versions of the CERN components), the sharing argument becomes less relevant.

Besides libraries or small modules, the alternate licence may also be used on a case-by case basis in particular when a) there is a particular concern that the obligation to release the source of a work incorporating unchanged the Open

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[15]   See the Volume of Annexes for details.
[16]   See Volume of Annexes for European Union statements and decisions in favour of software sharing.
[17]   See Volume of Annexes for status of adoption.

Source Software would seriously hamper its wide adoption and b) this concern outweighs the potential benefit for CERN of accessing the source of the combined work.

Permissive for Inclusion licences (which prevent modified versions to be distributed under a proprietary licence) ensure, as Copyleft licences, the non-appropriation by third-party of the CERN software. They also permit possible commercial exploitation via dual licensing.

As *alternate* licence, the OSL Task Force recommends LGPLv3, the latest version of the most widely-used Weak-Copyleft licence.

4.3.3 Rationale for exception Permissive for Inclusion and Modification licensing

The OSL Task Force proposes that for Class 1 software, an *exception* licence may be used when:
1. constraints are imposed by existing agreements such as with an external body (like the European Commission) concerning the development of the software;
2. neither the default nor the alternate licences are suitable for reasons within the collaboration with partners for Class 2/Class 4 software;
3. There is no wish to control the possible commercial exploitation of the software.

However, this is an *exception* licence, as it does not match the CERN philosophy of communities sharing their achievements since it permits appropriation of derivative work based on CERN software by third-parties.

As *exception* licence, the OSL Task Force recommends Apache v2, one of the most widely-used fully permissive licences.

4.3.4 Rationale for approaching the European Commission regarding EUPL

The EUPL is an outcome of the IDABC programme of the European Union. EUPL was intended to help EU citizens to work anywhere they chose, to encourage companies to invest in multi-site European installations and to make public service delivery more uniform across the Union. Section 1.5 of the Volume of Annexes provides additional information on EUPL's objective, scope, status and prospects.

This licence is the outcome of three years of study and analysis of several existing FOSS licences, which had determined that there were still needs unmet by existing licences. Version 1.1 of the European Union Public Licence was approved by the Open Source Initiative on 4 March 2009. The licence is available in 22 languages.

EUPL is a Free[18], Open Source[19] and Copyleft licence (Strong Copyleft) drafted to be fully compatible with European law. However, it is a very innovative licence which created the concept of "Copyleft Interoperability" to overcome some of the difficulties arising when merging programme licences under incompatible Copyleft licences.

Indeed, EUPL v.1.1 gives recipients ways to relicense larger derivative works under the terms of another Copyleft licence (selected from a list) in case the work covered by the EUPL v.1.1 is merged with another work covered by this other licence (and when what is distributed is the derivative work as a whole). This provides what is called a downstream compatibility[20] of EUPL v.1.1 with the licences that are part of the explicit compatibility list (the list includes the GPLv.2 (and indirectly GPLv3), OSLv.2.1 and v.3.0, CPLv.1.0, Eclipse Public Licence v1.0, CeCILLv.2.0).

Another feature of EUPL is that it is an extremely condensed and carefully written text (four times shorter than GPL.

Although EUPL v.1.1 has many advantages, as explained in section 3.2 above, it is currently not compatible with CERN's status as an Intergovernmental Organization. EUPL v.1.1 may therefore <u>not</u> be selected by CERN in its current form.

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[18]   Recognized by the Free Software Foundation as following the Free Software Definition (see Glossary in the Volume of Annexes)
[19]   Following the Open Source Definition and Approved by the Open Source Initiative
[20]   See Glossary in the Volume of Annexes

Considering that EUPL v.1.1 is a promising, modern, flexible and easy to use Copyleft licence, the OSL Task Force recommends that CERN approach the European Commission on a possible change of the licence, to make it compatible with the particular legal status of Intergovernmental Organizations.

4.4   Recommendation concerning Collaboration Agreements

For software developed in collaboration with external partners (Class 3 and Class 4), whenever possible, a *Collaboration Agreement* should be established at the inception of the collaborative activity.

- The Collaboration Agreement should specify which licence will be used for the jointly-developed software

- It should also cover Governance aspects related to the software, in particular, how will decisions be taken for:
    - Accepting new members in the collaboration
    - Changing to a different licence, for part or all of the jointly developed software
    - Deciding on new version releases
    - Defining a "prime owner"

- The Collaboration Agreement may also define a "prime distributor" of the software. A prime distributor is an organization, member of the collaboration tasked by the Collaboration to create and make available in an orderly fashion future releases of the software.
    - The concept of "prime distributor" is useful in many collaborations, in particular to provide a clear source of commonly agreed versions and avoid multiplication of conflicting source repositories.
    - The concept of "prime distributor" is, however, sensitive and may create tension between the partners as singling out one of the participating organizations. It should not be detrimental to the collaborative spirit of the Collaboration.
    - If CERN is the "prime distributor", incorporation of third-party modifications by CERN in future distribution releases may require that the owner of the modifications transfer their copyright to CERN. The reason is that it may become excessively difficult for the prime manager, especially over time, to maintain versions including components that cannot be modified, or even for which the owner is no longer able to be contacted.

4.5 Chart of proposed decision-making process for Open Source licence

The decision-making process below has been prototyped in the IT Department. In certain Departments, it may need to be adapted as it assumes a central involvement of the Departmental KT officer.
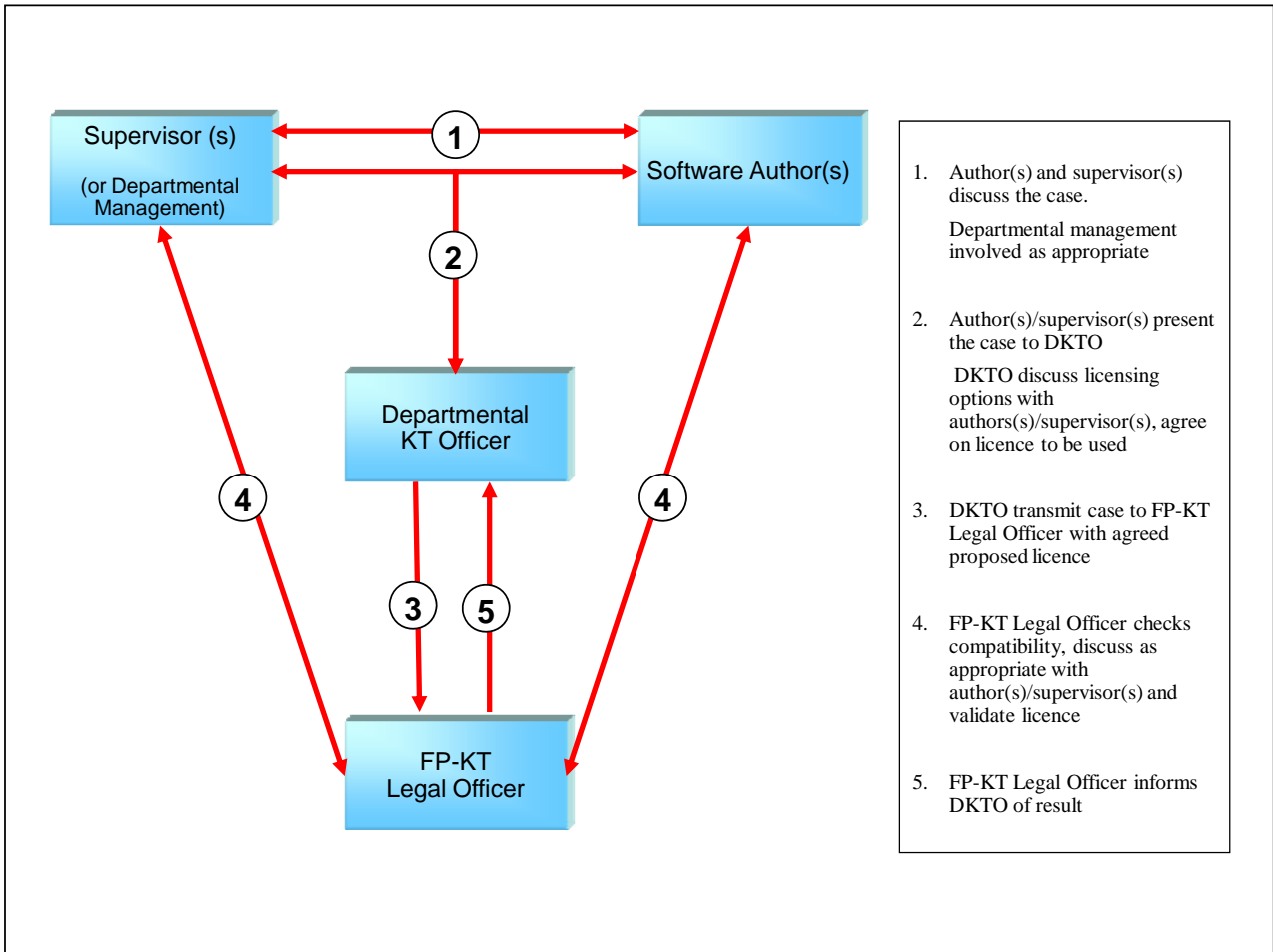
Figure 2: Proposed decision making process for Open Source licence cases

5   Next steps

These recommendations are limited to the mandate received by the OSL Task Force. If they are accepted, the following steps are proposed:

5.1   Awareness-raising

Action should be undertaken to raise awareness of the Open Source Software policy, the decision-making process and the practical Open Source mechanisms, in particular for new personnel likely to develop software.

5.2   Implementation and follow up

A permanent structure dealing with Open Source software matters should be set up. The following mandate is proposed:

1. Draft and maintain "best practices" for CERN developers regarding (i) use of third party Open Source software, (ii) practical application of Open Source licences to their own work, and (iii) collaboration with third parties for the development of Open Source software.

2. Draft and maintain (i) a standard document to be completed for each submission of software for Open Source distribution and (ii) a standard Collaboration Agreement for collaborations aiming at the joint development of software.

3. Study the feasibility of a mechanism for tracking and registering all existing and future Open Source Software made available by CERN.

4. Approach the European Commission on a possible change of the European Union Public Licence (EUPL) choice of jurisdiction clause, to make EUPL compatible with the legal status of International Organizations. Monitor the evolution and use of EUPL.

5. Study the feasibility of, and need for, a mechanism for checking the quality of candidates for Open Source Software release and for authorizing their distribution as CERN Open Source Software.

6. Study the implications of using external web sites dedicated to Open Source Software distribution (so-called "forges") for CERN software and to formulate recommendations. In particular, assess the usefulness and practicality for CERN to restrict the use of such external distribution sites to "CERN-approved forges".

7. Review at regular intervals the OSL Task Force recommendations (six months after adoption, then annually), to assess their practical applicability and implementation and, in particular, to verify the extent to which they fulfil the aim of maximizing dissemination.

6   Appendix

6.1   Mandate and Members of the OSL Task Force

6.1.1 Invitation by Head of the FP and IT Departments

"The current situation regarding Open Source Software licence to be used for programs developed at CERN needs to be clarified.

To this end, in our capacity as Head of the IT Department and Head of the FP department and KTT Group Leader, we have decided to create a Task Force to make recommendation on the subject and we are pleased to invite you to serve on the Task Force.

The mission statement of the task force, called the OSL Task Force is as follows:

"The Open Source License Task Force is a duration-limited and mandate-limited group tasked to formulate recommendations on which licence(s) should be used for which class of software developed at CERN. The term "licence" covers the ownership statement (© xxx), the distribution conditions and the liability/disclaimer/warranty statements. The deliverable should be a short document complemented by a short Annex on the rationale of the recommendation(s)."

The rational, scope and means to achieve the goals are detailed in the attached note.

The OSL Task Force will be chaired by François Fluckiger and comprised of the following members.

Frederic Hemmer and Thierry Lagrange, 25/03/2011"

6.1.2 Members

Field of expertise	Member	Unit
Chair person – IT KTT Officer	François Fluckiger	IT
Legal aspects of Open Source; Intellectual property	Myriam Ayass	FP-KT
Requirements from Specialized SW cases (control)	Renaud Barillere	EN
CERN Legal Officers	Kirsten Baxter Diane Nourissier	Legal Service
Large collaborative SW (GEANT, ROOT)	René Brun	PH
KTT expert	Bernard Denis	FP-KT
PH-SFT Group Leader	John Harvey	PH
EU project SW; Large collaborations; Open Source in general	Bob Jones	IT
SW licences and Open Source in general	Fons Rademakers	PH
Requirements from limited-scale collaborative SW	Katarina Sigerud	BE
Open access; Large CERN SW; Open Source in general	Tim Smith	IT
CERN Deputy Legal Counsel	Maarten Wilbers	Legal Service

6.2   Content of the Volume of Annexes

6.2.1 Logical content

This final report is complemented by a sets of Annexes. These annexes provide three categories of information:

a) Background educational and reference material on Open Source Licensing: glossary and explanation of terms; actors in the Free / Open Source Software landscape; and, additional information on the EUPL.

b) Material for practical implementation of the recommendations: how to describe Open Source Software cases at CERN; and, how to specify the copyright and licence terms in CERN Open Source Software.

c) The analysis of the current situation of Open Source Software licensing at CERN, which motivated the creation of the OSL Task Force.

6.2.2 Detailed Table of Contents

1.   Background educational and reference material

1.1 Glossary of key terms
1.2 Additional explanations on terms used in the OSL-Task Force Final Report
1.3 The Open Source Initiative (OSI) Definition criteria and the most widely used OSI licences
1.4 The Free Software Foundation (FSF) definition of Free Software
1.5 The EUPL Licence

2.   Material for practical implementation of the recommendations

2.1 Draft Form to document software cases submitted for Open Source distribution

2.2 Instruction Note for specifying the licence terms in Open Source software
  a.   Copyright Statement
  b.   Licence statement
  c.   GPL licence text
  d.   LGPL licence text
  e.   Apache v2 licence text

3.   Open Source Software Licensing at CERN: The current formal and de-facto situation

3.1 Consequences of de-facto practices without de-jure policy
3.2 The policy as defined in 2005
3.3 The CERN Open-Access policy
3.4 Summary of the situation