COMPUTREE CHARTER

This charter highlights main operating procedures of the Computree platform. It describes the goals of the platform, the rules, the different roles in the Computree community, as well as the governance and management modalities of the platform.

The use of the Computree platform, or the development of Computree plugins and libraries, implies the express acceptance of the provisions of this Charter.

Failure to comply with the dispositions of this charter may result in the exclusion of the Computree Community.

PREAMBLE: PRESENTATION OF THE PLATFORM

1. History

The Computree platform started in spring 2010 as part of a collaboration between the Research, Development and Innovation (RDI) department of the Office National des Forêts (ONF) and the Ecole Nationale Supérieure des Arts et Métiers (ENSAM) of Cluny, within the ANR Emerge project. Between 2010 and 2016, the core of the platform was developed and mostly maintained through ONF budget, supplemented by contributions from the ANR Emerge and Foresee projects. ONF (mainly processing algorithms), and ENSAM research contracts (mainly core of the platform) shouldered most of the programming. Initially focused on terrestrial LIDAR data processing, the platform opened itself to other data sources such as the airborne LIDAR since 2014.

In 2018, the governance and management of the platform was transferred from ONF to the Computree group, under GIP ECOFOR. The group includes a number of organizations or institutions contributing resources dedicated to the platform (staff time, material or logistical contributions, financial contribution). The "Terms of Governance, Management and Operation" section of this charter describes this aspect in detail.

This transfer of governance is motivated by the following goals:

- To carve Computree's collaborative philosophy in its governance.
- To mutualize its funding, to facilitate and secure its evolution and maintenance.
- To support the Computree community through the gradual build-up of a multi-partner project team (especially as regards contributing staff allocations).
- To ensure a balance between scientific and operational goals through the diversity and complementarity between group's partners.
- To promote international cooperation through the platform.

The founding members of the Computree group are: the Office National des Forêts, the GIP Ecofor, the Institut National de l'Information Géographique et Forestière, the Institut National de la Recherche Agronomique and the University of Sherbrooke.

2. Objectives of the Platform

The Computree platform is a collaborative tool for data processing in the context of forest management, or natural environment in general. It offers a modular environment allowing mainly the treatment of remote sensed data: terrestrial LIDAR, airborne LIDAR, airborne or satellite photographs, raster data (digital terrain models, digital surface models or canopy height models)... However its processing capacities can be extended to any type of 3D geometric data, 2D, or attributes.

The main objective of Computree is to promote synergies in the development and use of data processing methods in order to describe, analyse and inventory forest stands or other natural environments. This goal is further divided into three complementary sub-goals:

- To facilitate the development, validation, provision and benchmarking of innovative algorithms and workflows.
- To allow a simple and efficient use of these algorithms for scientific research purposes. In this case the Computree platform is an analysis tool used to answer scientific questions related to the forest.
- To improve methods and tools, and ultimately make them available for operational use, in any relevant field, such as forest inventory, description of natural environments, forest planning or forest management.

The linkages between those 3 dimensions is at the heart of the Computree platform philosophy.

Though most features of the platform could accommodate other operating environments, the shared resources allocated to the management and maintenance of the platform will focus exclusively on natural environments.

3. Platform architecture

The platform is built on a modular architecture that makes it easy for independent teams of the Computree community to add custom features The platform encompasses the following elements:

- The **core** contains all common process management features, shared data structures, and the plugin management system. The core is also in charge of the connection with external libraries, usable within the platform.
- The **standard graphical interface** allows the interactive use of all the features of the core and its extensions (plugins).
- The **standard batch interface** allows the execution, without graphical interface, of Computree processing scripts.
- The **plugins** are autonomous modules, connected only to the core, used to add features. The development of a plugin is totally independent of the other plugins. However, each plugin can be used in conjunction with other plugins at runtime.
- **Libraries** are standalone modules, connected only to the core, making generic features available to plugins.

Several basic plugin and libraries are provided as standard with the platform and contain the essential functionalities for the creation of processing chains (in particular import/export formats).

There is no limit to the number of plugins or libraries that could be added to Computree. The system is also designed to allow the use of new interfaces, graphic or not, developed for example for specific uses or certain plugins only.

The principle of the platform is to propose, through the interfaces, the possibility for the user to create sequences of workflows, from bricks named "steps" contained in the plugins. Each step consists of applying an algorithm to input data in order to produce output data.

Thus, by linking steps, potentially from different plugins, the user can compose a process adapted to his needs. Some steps can be very generic (thus usable in many contexts). Others are dedicated to a very specific use.

The processing sequence can be fully constituted and saved as a script, before immediate or delayed execution.

I. DEFINITIONS

"**Computree Community**" means all physical or legal persons who develop plugins or use the Computree platform. In order to clarify the interactions within the Computree community, this charter defines several "Computree roles". The same person could have multiple roles at the same time, or over time:

- **Computree Group Leader**: a corporate entity administering the Computree Community on behalf of the Group Members and their Strategy Committee; in 2018, the ONF transfers this responsibility to the GIP Ecofor by agreement. Subsequently, this responsibility could be transferred if necessary to another member of the group by the strategic committee (see article III.1 of this charter).

- **Member of the Computree group:** legal or physical person under agreement with the Computree Group Leader for a contribution to the resources allocated to the Computree platform, and having a voting right in the definition of the maintenance and evolution strategy of the platform.

- **Computree Manager:** person responsible for delivering the maintenance and evolution strategy of the platform. She/he leads the Computree community and organizes development work. This person is responsible for the technical committee, has the role of development manager and reports to the strategic committee. The Computree Manager is the contact for any questions from third parties. This role is assigned each year, by the strategic committee (see Article III.1 of this charter), to one of the persons having working time allocated to the platform.

- **Computree developer:** person in charge of delivering maintenance and the production of new central elements of the platform (see article II). The Computree Developer Team is made up of people whose whole or part of the time has been allocated to the platform by members of the Computree Group. It also includes developers funded contractually by the Computree Group Leader using the financial resources allocated to the platform. This team is led by Computree Manager.

- **Computree facilitator:** person responsible for conducting Computree "user" or "plugin developer" seminars. The Computree facilitators' team is made up of individuals whose whole or part of the time has been allocated to the platform by members of the Computree Group. This team is driven by Computree Manager.

- **Computree user:** anyone using the Computree platform and its plugins for scientific or non-scientific applications.

- **Computree plugin owner:** legal or physical person holding the rights to a plugin, managing its development and dissemination.

- **Computree plugin developer:** person in charge of the maintenance and the implementation of new functionalities within a specific plugin.

II. USE OF THE PLATFORM AND INTELLECTUAL PROPERTY RIGHTS

The core, the standard batch interface as well as common plugins and common libraries are released under the open-source LGPL (*Lesser General Public License*). The standard graphical interface is made available under the *General Public License* (GPL).

These elements can thus be used for any professional or personal use, commercial or not, respecting the conditions of this Charter. As stated in the LGPL and GPL licenses, the platform is distributed without any guarantee, neither explicit nor implicit.

Computree users are asked to explicitly cite the platform, plugins and libraries used in all published works, valuing the results obtained using Computree. As such, the platform provides a functionality to obtain the appropriate citation information for each user-created processing chain.

Each plugin or library (apart from common plugins) is the property of an author, group, organization, institution, company, or member of the Computree community that has created this plugin or library. The owner of the plugin has full latitude to choose the rules and modalities of dissemination and conditions of use of its plugin. The Computree standard graphical interface being under GPL license, a licensed non-GPL compatible plugin will either have to remain in internal use, or offer an alternative interface. Note that the Computree standard batch interface does not impose any such restrictions.

The platform thus hosts several components (core, interfaces, plugins, and libraries) of different nature with regard to the intellectual property rights and the rights of use attached to them.

The central elements of the platform are the subject of shared ownership between the current and past members of the group in proportion to their total contribution whatever their nature (financial amount, staff time, material resources), evaluated financially and cumulated since 1st January 2010. They include:

- The core,

- The standard graphical interface,

- The standard batch interface,

- Common plugins.

- Common librairies.

The addition of new elements (common plugins and libraries) to the list of central elements can only be done by the strategic committee, insofar as these elements are developed on the resources allocated to the platform. They are subject to shared ownership, though each member remains the owner of the rights on his initial contributions (integration of previous works). A list of core elements is maintained by the Strategic Committee and is included in the annual activity report. Also included in this activity report is an updated statement of contributions accumulated since January 1, 2010, of each of its active or departing members. The contributions recognized for the current year are added to the balance sheet, after unanimous vote of their accuracy by the strategic committee. This report gives the annual details of the contributions and their nature for each member who is or has been part of the group.

As for other plugins or libraries (general case), the intellectual property is managed autonomously: the membership in the Computree group gives no rights on plugins or libraries that are not part of the list of central elements.

III. TERMS OF GOVERNANCE, MANAGEMENT AND OPERATION

1. Management

Two committees are established to manage the Platform, and each meets once a year.

A **technical committee**, only consultative, aims to make proposals for the evolution of the platform to feed the strategic committee. This committee is led by Computree Manager and meets at least once a year. All members of the Computree group are welcome to participate, and it is also open to any Computree plugin developer. The Computree Manager reviews the evolution of the platform over the past year. It also summarizes user requests from different channels, including the Computree user forum. Finally, the members of the technical committee list the proposals for changes to the platform for the coming year and propose criteria for prioritization.

A **Strategy Committee**, composed of the members of the Computree Group as defined in Article I, meets at least once a year. It makes all decisions regarding the Computree Group and the management of its resources. In particular:

- It determines (absolute majority vote) the general orientations of the Platform, the main priorities for the allocation of resources for the following year, on the basis of the proposals of the technical committee, or the possible reallocation of these resources during the year.

- It validates (absolute majority vote) the updated version of the balance sheet of contributions accumulated since 2010 of active and past members, as well as the updated list of central elements. These two documents will be systematically integrated into the annual activity report.

- It appoints the Computree Manager for the coming year (absolute majority vote), which may be preferentially an employee of the group members or possibly an agent under contract with the Computree Group Leader.

- It renews - or transfers to another member if necessary - the function of Computree Group Leader (vote by unanimity).

- It decides on the integration of new members (two-thirds majority vote) according to the procedure described in Article IV.1.

- It could decide to exclude a member who does not respect the present Charter (vote by unanimity, the member concerned not being taken into account in the vote), according to the procedure described in article IV.2.

- It modifies this charter (vote by unanimity). These modifications must be the subject of an amendment signed by the members of the group.

2. Voting right at the strategic committee

Only members of the Computree Group have a right to vote.

The weighting of votes in the strategic committee is proportional to all the contributions made by the member (financial amount, staff time and material resources evaluated financially), for the current year. One vote is awarded per full part of 1000 euros. Exceptionally, a member may not be awarded more than 45% of the total voting rights regardless of the amount of his contribution.

Bipartite agreements between the Computree Group Leader and the various partners set the expected level and duration (for staff time contributions) of these contributions.

3. Administrative management

The Computree Group administrative management is handled by the Computree Group Leader. Its mission is to:

- Manage the budget of the platform, noting a significant part of the resources is dedicated to the maintenance of the platform (system evolutions, hosting, bug fixing, dissemination, documentation ...) and to the development of components selected by the Strategic Committee.

- Manage group membership agreements and compliance with its provisions.

- Manage development subcontracting agreements.

- Plan the management meetings of the platform.

- Administer allocated resources.

- Ensure compliance with the provisions of this Charter.

- Ensure daily the smooth running of the Platform.

4. Allocation of resources

The resources provided by the members of the group (and any seminar fees requested from the participants, described in Article III.5) are used for the maintenance and development of Computree core elements, the tests as well as the animation of the Computree community, dissemination and documentation of the platform.

Note that the development of plugins and libraries is not funded on resources allocated to the platform, excepting plugins and libraries listed among central elements, whose development has been validated by the strategic committee. This list is kept up to date by the Computree Manager.

The use of Computree and the resources made available to enable and facilitate the development of plugins are completely free. Online resources are made available to facilitate the independence of Computree community members. An exchange forum also aims to promote mutual support in the community.

5. Organization of seminars

"Plugin developers" seminars are proposed according to the needs. They are free for any plugin released under Open-Source license and remaining in the fields of application of natural environments or forest. In all other cases, they are subject to payment on invoice of seminar fees.

Each year, at least one Computree User Seminar is offered to the community, possibly several depending on demand and needs. These seminars are intended to introduce users to the use of the Computree platform. Thematic deepening seminars may also be offered. These seminars may be subject to payment on invoice of seminar fees incurred by each trainee. For ease of access, Computree User Seminars can also be offered in the training catalogue of one or more group member organizations.

The resources resulting from the organization of these seminars (if any) feed into the budget allowing the evolution of the platform. In addition, members of the Computree community are free to organize their own Computree seminars or training.

IV. EVOLUTION OF THE COMPOSITION OF THE COMPUTREE GROUP

1. Conditions of admission and obligations of new members

When a new member wishes to join the Computree group, a draft agreement with the Computree Group Leader - specifying, if applicable, past contributions to the core elements of the platform, and in any case the contributions planned for the period of the convention - is drafted before the meeting of the strategic committee. During the meeting, the strategic committee considers and decides on the integration of the new member by a two-thirds majority. Once the integration is validated and the agreement between the new member and the Computree Group Leader signed by both parties, the new member joins the Computree Group and sits on the Strategy Committee.

New members undertake to respect the obligations incumbent on them and the provisions of this charter.

New members commit to allocate significant resources (equivalent value greater than or equal to 5,000 € / year), over time, to maintain or develop the core elements of the Computree platform. These resources are defined in a multi-year agreement with the Computree Group Leader. They can be of different natures:

- Financial amount.
- Staff time made available.
- Material resources made available.

In all cases, these resources are converted into an equivalent monetary amount, in order to determine the voting rights of each member of the group, in proportion to his contribution for the current year.

2. Conditions of exclusion of a member

In the event that one of the members fails to comply with the obligations set out in this charter, and after a formal notice from the Computree Group Leader has been ineffective for a period of three months, the Strategy Committee may decide to exclude him (by unanimity, the member at stake not participating in this vote), noting that the contributions paid are not returned to him.

In this case, the Strategic Committee mandates the Computree Group Leader to terminate the agreement with the member at stake. The termination date will be set at the end of the financial year, as far as possible.

3. Renewal Terms for Active Members

At the expiry of the agreement of one of the members of the group, this member may automatically decide on its renewal (by amendment or new agreement), unless he has violated of the provisions of this charter.

However, if the contribution is increased by more than 50%, the strategic committee must agree to this increase (absolute majority vote, the member at stake not participating in this vote).

The voting rights will be recalculated according to the terms defined in Article III.2.

V. RESPONSIBILITIES / WARRANTY

The Computree platform is made available "as is" without warranty of any kind, either express or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. The entire risk as of quality and performance of the platform is supported by the user. If the platform is defective, the users bear alone the cost of any necessary repairs.

Computree Group members are not responsible for the use made by users of the Platform or the results of the resulting analysis.

VII. GENERAL PROVISIONS

Nothing in this Charter shall be construed as constituting among the members a legal entity of any nature whatsoever or involving any kind of solidarity between the members.

The members declare that the present Charter cannot in any case be interpreted or regarded as constituting an act of society, the affectio societatis is formally excluded.

No member has the power to engage other members, nor to create obligations for other members, other than the Computree Group Leader, for the sole purpose of the assignment and to the extent of the rights which are granted to it/her/him.