

Technical Charter (the “Charter”)

for

The OpenTitan Project, a lowRISC CIC Chartered Project

This charter (the “Charter”) sets forth the responsibilities and procedures for technical contribution to, and oversight of, the OpenTitanProject (the “Project”), which has been established as a lowRISC CIC Chartered Project. All Contributors to the Project must comply with the terms of this Charter.

1. Mission and Scope of the Project

- a. The mission of the Project is to develop an open source hardware project with the goals indicated in the “README” file within the Project’s code repository. Changes to the project goals listed in the “README” file shall only be amended upon approval by the majority of the lowRISC CIC Board of Directors (the “Board”).
- b. The scope of the Project includes RTL, netlists, software, documentation, bills of materials, design verification, testing, integration and the creation of other artifacts that aid the development, deployment, operation or adoption of the open source project.

2. Steering Committee

- a. The Steering Committee (the “SC”) will be responsible for all oversight of the Project.
- b. The initial members of the SC shall be appointed by the majority of the Board. Once established, the SC may create criteria for determining future voting members of the SC, subject to a vote of approval by the majority of the Board. SC membership will always be dependent upon new SC members agreeing to required Project policies including the Project’s Non-Disclosure Agreement, the Code of Conduct Policy, the Communications Policy, and any other required Project policies determined necessary by unanimous vote of the SC.
- c. Each SC member may lose SC membership if their membership depends, at least in part, on dedicating engineers to Project work and it is determined by the majority of the unaffected SC members that the dedicated engineers aren’t

working towards the most recent unanimously agreed-upon technical roadmap. SC members also have a good faith duty to act in the best interests of the Project.

- d. Projects generally will involve Contributors and Committers. The SC may adopt or modify roles of Project Contributors and Committers so long as the roles are documented in the CONTRIBUTING file. Unless otherwise documented:
 - i. Contributors include anyone in the technical community that contributes code, documentation, or other technical artifacts to the Project; and
 - ii. Committers are Contributors who have earned the ability to modify (“commit”) source code, documentation or other technical artifacts in a project’s repository.
- e. Participation in the Project through becoming a Contributor is open to anyone so long as they abide by the terms of this Charter.
- f. The SC may (1) establish workflow procedures for the submission, approval, and closure/archival of projects, (2) set requirements for the promotion of Contributors to Committer status, as applicable, and (3) amend, adjust, refine and/or eliminate the roles of Contributors, and Committers, and create new roles, and publicly document any SC roles, as it sees fit.
- g. The SC shall elect a SC Chair, who will preside over meetings of the SC and will serve until their resignation or replacement by the SC. The responsibilities of the SC Chair may include:
 - i. chairing SC meetings;
 - ii. determining whether quorum is met for any given vote;
 - iii. counting SC votes;
 - iv. encouraging resolution of SC discussion and votes; and
 - v. communicating with the Project Director about any SC meetings the Project Director is unable to attend.
- h. SC responsibilities: The SC will be responsible for all aspects of oversight relating to the Project, which may include, subject to the discretion of the Board:
 - i. establishing a Technical Committee (“TC”);
 - ii. voting in the initial members of the TC, subject to a unanimous SC vote;

- iii. nominating new members to the TC on an ongoing basis, subject to a unanimous SC vote;
- iv. devolving powers to the TC, subject to a majority SC vote;
- v. managing the budget for funds distributed from lowRISC to Project to further the Project goals;
- vi. coordinating the technical direction of the Project: SC shall work with TC to publish a roadmap for the Project's technical direction, subject to a unanimous SC vote;
- vii. setting criteria for "Active Status" of TC members. If a TC member does not maintain "Active Status" for the period of time determined in the SC's criteria, the "Inactive" TC member may lose membership in the TC. The Active Status of TC members will be evaluated at least annually.
- viii. approving sub-project or system proposals (including, but not limited to, incubation, deprecation, and changes to a sub-project's scope), and removing sub-projects;
- ix. appointing representatives to work with other open source or open standards communities;
- x. approving any proposed changes to the technical framework for compliance & certification under the Project's trademarks (*i.e.*, what meets the standards of OpenTitan certification). If the TC's proposed changes are not approved by the SC within one month of notification the proposal will be assumed to fail. Default failure of a proposal does not prevent the TC from proposing the change to the SC again after the one month consideration period.
- xi. establishing community norms, workflows, issuing releases, and security issue reporting policies;
- xii. approving and implementing policies and processes for contributing (to be published in the CONTRIBUTING file) and coordinating with the lowRISC CIC Board to resolve matters or concerns that may arise as set forth in Section 7 of this Charter;
- xiii. approving any marketing, events, or communications; and
- xiv. recommending any revisions of the Communications Policy to the Legal Committee.

- i. The Board will appoint a Project Director as a representative of the Board within the SC membership. The powers and responsibilities of the Project Director will include:
 - i. working with the SC to set a Technical Roadmap;
 - ii. reporting to the Board on a quarterly basis (at minimum);
 - iii. approving or rejecting RFCs unilaterally, as necessary;
 - iv. referring SC decisions to the Board; and
 - v. proposing changes to the Project mission and submitting these proposals to a majority vote by the Board. Project Director may collect feedback on proposed changes from the SC and/or TC.

3. SC Voting

- a. While the Project aims to operate as a consensus based community, if any SC decision requires a vote to move the Project forward, the voting members of the SC will vote on a one vote per voting member basis.
- b. Quorum for SC meetings requires at least sixty percent of all voting members of the SC to be present. Voting members of the SC will be considered “present” for the purposes of meeting quorum if the members are present in person or participating in the meeting in real time over the phone or on video-conferencing. The SC may continue to meet if quorum is not met, but will be prevented from making any decisions at the meeting if a unanimous vote is required. Voting can be satisfied electronically, for example over email, phone, or video-conferencing.
- c. Except as otherwise provided, decisions by vote at a meeting require a unanimous vote of those SC voting members in attendance, provided that quorum is met. Quorum is based on the number of SC voting members present in person or over the phone or on video-conferencing at the time of the meeting. Except as otherwise provided, decisions made by electronic vote without a meeting require a unanimous vote of all voting members of the SC. For the avoidance of doubt, even where a quorum of voting members in attendance at an in-person meeting vote unanimously, additional votes may be submitted by absent SC voting members within two days electronically by email.
- d. If any voting member of the SC fails to participate in four consecutive SC meetings requiring a quorum to vote, any other member of the SC may refer the non-voting member’s SC membership to the Board for reconsideration.
- e. In the event that a vote cannot be resolved by the SC, any voting member of the SC may refer the matter to the Board to reach a resolution.

4. Technical Committee

- a. Responsibilities: The TC will be responsible for the routine technically-based decisions required to implement the Project's technical roadmap, which may include:
 - i. nominating members to the TC, subject to a unanimous vote of approval from the SC;
 - ii. creating Commit Escalation Guidelines setting out the guidance for when Committers should escalate a particular Commit to the TC (*e.g.*, cross-cutting changes), and when Committers should recommend a design rationale write-up or RFC for wider feedback from the TC;
 - iii. voting on what persons become Committers (as defined above), requiring a majority vote by the TC;
 - iv. proposing changes and/or additions to the Project's technical roadmap, subject to a majority vote by the SC;
 - v. proposing the technical framework for compliance & certification under the Project's trademarks (*i.e.*, what meets the standards of OpenTitan certification). The TC shall notify the SC of the proposed changes to the technical framework. Absent rejection by the SC within one month of notification, the proposed changes will be implemented;
 - vi. determining whether an RFC is complete and approving RFCs by a majority vote of the TC, or referring the RFC to the SC, at the TC's discretion; and
 - vii. providing administrative support as outlined by the TC Chair.

TC members also have a good faith duty to act in the best interests of the Project.

5. Compliance with Policies

- a. This Charter is subject to the lowRISC CIC Articles of Association.
- b. The Project shall comply with the universal Code of Conduct that shall be promulgated and enforced by lowRISC CIC. The SC can make suggested amendments to the Code of Conduct directly to lowRISC CIC.
- c. The Project will operate in an ethical and collaborative manner. Where reasonable, the Project will operate openly in forums such as public git repositories. Whenever possible, the output of all Project discussions, proposals, timelines, decisions, and statuses should be made open and easily visible to all. Any potential violations of this requirement should be reported immediately to the

Board. The Project will comply with all communications policies that may be issued from the Board.

6. Community Assets

- a. lowRISC CIC shall hold title to all trade or service marks used by the Project (“Project Trademarks”), whether based on common law or registered rights. Project Trademarks shall be transferred and assigned to lowRISC CIC to hold on behalf of the Project. Any use of any Project Trademarks by participants in the Project shall be in accordance with the license from lowRISC CIC and inure to the benefit of lowRISC CIC.
- b. The Project shall, as permitted and in accordance with such license from lowRISC CIC, operate and control all Project code repositories (including GitHub) and social media accounts, and domain name registrations created by the Project community. Ownership of these accounts shall ultimately flow to lowRISC CIC.
- c. Under no circumstances shall lowRISC CIC be expected or required to undertake any action on behalf of the Project that is inconsistent with the not-for-profit status or purpose of lowRISC CIC.

7. Intellectual Property Policy

- a. “Contributions” shall have the meaning defined in the lowRISC CIC Contributor License Agreement.
- b. Participants acknowledge that the copyright in all new Contributions shall be retained by the copyright holder as independent works of authorship and that no contributor or copyright holder will be required to assign copyrights to the Project.
- c. All Contributions to the Project are subject to the following:
 - i. All new inbound Contributions to the Project must be made using an OSI-approved open source license specified for the Project within the “LICENSE” file within the Project’s code repository (the “Project License”).
 - ii. All new inbound Contributions must be accompanied by a sign-off text. The sign-off text must be included once per commit, in the commit message. The sign-off can be automatically inserted using a command such as “git commit -s,” which will generate the text in the form, “Signed-Off-By: Random J Developer <random@developer.example.org>”. The sign-off will bind the individual contributor or, if not self-employed, their employer to license grants in the Apache License, Version 2.0 via an Individual Contributor License Agreement (Exhibit B). The name and email in the sign-off should match

the name and email in the commit metadata. The meaning of “Signed-Off-By” is defined in the “CONTRIBUTING” file at the root of the repository, which must contain the following text:

1. By signing-off on this submission, I agree to be bound by the terms of the Contributor License Agreement located at the root of the project repository, and I agree that this submission constitutes a “Contribution” under that Agreement.

- iii. All outbound code will be made available under the Project License.
- iv. Documentation will be received and made available by the Project under the Creative Commons Attribution 4.0 International License (available at <http://creativecommons.org/licenses/by/4.0/>).
- v. The SC may request the use of an alternative license or licenses for inbound or outbound contributions on an exception basis. All such requests must be reviewed and approved by the Board.

8. Amendments

- a. This charter may be amended by a two-thirds vote of the entire SC and is subject to approval by the Board.

Exhibit A

lowRISC CIC

Contributor License Agreement ("Agreement") v1.0

You accept and agree to the following terms and conditions for Your present and future Contributions submitted to the Project. Except for the license granted herein to the Project and recipients of software distributed by the Project, You reserve all right, title, and interest in and to Your Contributions.

1. Definitions.

"You" (or "Your") shall mean the copyright owner or legal entity authorized by

the copyright owner that is making this Agreement with the Project. For legal entities, the entity making a Contribution and all other entities that control, are controlled by, or are under common control with that entity are considered to be a single Contributor. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"Contribution" shall mean any original work of authorship, including any modifications or additions to an existing work, that is intentionally submitted by You to the Project for inclusion in, or documentation of, any of the products owned or managed by the Project (the "Work"). For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Project or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Project for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by You as "Not a Contribution."

2. Grant of Copyright License. Subject to the terms and conditions of this Agreement, You hereby grant to the Project and to recipients of software distributed by the Project a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare derivative works of, publicly display, publicly perform, sublicense, and distribute Your Contributions and such derivative works.

3. Grant of Patent License. Subject to the terms and conditions of this Agreement, You hereby grant to the Project and to recipients of the Work distributed by the Project a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by You that are necessarily infringed by Your Contribution(s) alone or by combination of Your Contribution(s) with the Work to which such Contribution(s) was submitted. If any entity institutes patent litigation against You or any other entity (including a cross-claim or counterclaim in a lawsuit) alleging that your Contribution, or the Work to which you have contributed, constitutes direct or contributory patent infringement, then any patent licenses granted to that entity under this Agreement

for that Contribution or Work shall terminate as of the date such litigation is filed.

4. You represent that you are legally entitled to grant the above license. If your employer(s) has rights to intellectual property that you create that includes your Contributions, you represent that you have received permission to make Contributions on behalf of that employer, that your employer has waived such rights for your Contributions to the Project, or that your employer has executed a separate Corporate CLA with the Project.

5. You represent that each of Your Contributions is Your original creation (see section 7 for submissions on behalf of others). You represent that Your Contribution submissions include complete details of any third-party license or other restriction (including, but not limited to, related patents and trademarks) of which you are personally aware and which are associated with any part of Your Contributions.

6. You are not expected to provide support for Your Contributions, except to the extent You desire to provide support. You may provide support for free, for a fee, or not at all. Unless required by applicable law or agreed to in writing, You provide Your Contributions on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE.

7. Should You wish to submit work that is not Your original creation, You may submit it to the Project separately from any Contribution, identifying the complete details of its source and of any license or other restriction (including, but not limited to, related patents, trademarks, and license agreements) of which you are personally aware, and conspicuously marking the work as "Submitted on behalf of a third-party: [named here]".

8. You agree to notify the Project of any facts or circumstances of which you become aware that would make these representations inaccurate in any respect.

Please sign: _____ Date: _____