



Byelaws of the Linked Data Benchmark Council (LDBC)

Version 1.4

Adopted 2 May 2023

*Agreed by electronic vote of the Members Council, closing 2 May 2023, and
Adopted by electronic vote of the Board of Directors, 2 May 2023*

Article 1 — Relationship of Byelaws to the Articles of Association	4
1.1. <i>Arbitration</i>	4
Article 2 — Addresses	4
2.1. <i>Web Addresses</i>	4
2.2. <i>Postal Address</i>	5
2.3. <i>Electronic Mailing Lists</i>	5
Article 3 — Membership	5
3.1. <i>Applications for Membership</i>	5
3.2. <i>Admission to Associate Membership</i>	6
3.3. <i>Admission to Voting Membership</i>	6
Article 4 — Directors, Members Council and Officers	6
4.1. <i>Board of Directors</i>	6
4.2. <i>Members Council</i>	7
4.3. <i>Secretary and Treasurer</i>	7
4.4. <i>Appointments and resignations</i>	7
Article 5 — Task Forces and Working Groups	8
5.1. <i>Task Force Scope</i>	8
5.2. <i>Task Force Organization</i>	8
5.3. <i>Working Groups</i>	9
Article 6 — Benchmark Adoption, Retraction and Maintenance	9
6.1. <i>Minimum Benchmark Adoption Requirements</i>	9
6.2. <i>Maintenance of Benchmarks</i>	10
Article 7 — Benchmark Results	11
7.1. <i>System Under Test</i>	11
7.2. <i>Price Metrics</i>	11
7.3. <i>Test Sponsor</i>	11
7.4. <i>LDBC Benchmarks[®] and LDBC Benchmark[®] Results</i>	12
7.5. <i>Reporting of LDBC Benchmark[®] Results</i>	13
7.6. <i>Fair Use of the trademark LDBC BENCHMARK[®]</i>	14
7.7. <i>Challenging Benchmark Results</i>	15
Article 8 — Benchmark Auditing	16
8.1. <i>Benchmark Auditors</i>	16
8.2. <i>Auditor Compensation</i>	16
8.3. <i>Auditor Qualification</i>	16
8.4. <i>Auditing by the Task Force itself</i>	16
8.5. <i>Auditor Independence</i>	16
8.6. <i>Audit Requirements</i>	17
Article 9 — Communications	17
9.1. <i>Confidentiality</i>	17

9.2. <i>Fair Use</i>	18
Article 10 — Intellectual Property Rights	18
10.1. <i>IPR Assets</i>	18
10.2. <i>Copyright</i>	18
10.3. <i>Inbound Licences</i>	19
10.4. <i>Outbound Licences</i>	19
10.5. <i>Patents</i>	19
10.6. <i>Trade marks</i>	19
Appendix 1: Work Charter Pro-forma	21
Appendix 2: Procedures for the Members Council	22
1. <i>Regulation of proceedings</i>	22
2. <i>Convocation of meetings</i>	22
3. <i>Chairing of meetings</i>	22
4. <i>Quorum</i>	22
5. <i>Written or electronic resolutions</i>	23

Article 1 — Relationship of Byelaws to the Articles of Association

These Byelaws are supplementary to the Articles of Association (the “Articles”) of the Linked Data Benchmark Council (the “Company”).

These Byelaws and any other rules of the Company made in accordance with Article 31 of the Articles are to be adopted or modified by the Directors of the Company only after they have been agreed by the Members Council.

These Byelaws being Version 1.4 were adopted by the Directors on [day month] 2023

Terms whose interpretation is defined in Article 2 of the Articles are used in this document with the same meaning.

Nothing in these Byelaws may be interpreted as affecting or repealing any provision of the Articles.

1.1. Arbitration

In the event of a dispute among the members with respect to any provision of these Byelaws, or the application of these Byelaws to the business conducted by the Company, which cannot be resolved by the Board of Directors or the Members Council, such dispute shall be settled by the appointment of a single arbitrator to be agreed between the parties, or failing agreement within fourteen days, after either party has given to the other a written request to concur in the appointment of an arbitrator, by an arbitrator to be appointed by the President or a Deputy President of the Chartered Institute of Arbitrators. The arbitrator will apply English law to this arbitration and this arbitration will take place in London, or such other place as the parties may agree. Written notice of any arbitration hearing will be given to all members at least ten business days prior to commencement of arbitration.

Article 2 — Addresses

2.1. Web Addresses

The Company shall maintain

- a) a public internet website at the address:

<https://www.ldbcouncil.org>

which shall include up-to-date details of its list of Voting Members which are Organizations, and of its membership dues, and of any Task Forces and Working Groups including their Work Charters, as well as any other content

about the work of the Company that the Board of Directors choose to make public.

- b) one or more more internet websites only accessible to Members, or to Officers or other agents or employees of the Company, which shall include records of the minutes of meetings of the Board of Directors and Members Council, and of any other bodies established to conduct the work of the Company.
- c) open-source repositories and other internet-accessible stores of information, reports, publications or other text or data or software code, which are created by or used by the Company's Members in the course of their activities within and for the Company, including a Github oorganization:

<https://www.github.com/ldbc>

2.2. Postal Address

The LDBC's postal address is its registered office address:

First Floor, Two Chamberlain Square
B3 3AX
Birmingham
United Kingdom

2.3. Electronic Mailing Lists

The Company maintains an email distribution list

info@ldbcouncil.org

which reaches the Officers and administrative staff of the Company, and a list

bod@ldbcouncil.org

which reaches the Board of Directors, and a list

members-council@ldbcouncil.org

which reaches the Members Council.

Article 3 — Membership

3.1. Applications for Membership

Applications for Associate or Voting Membership should be sent to the Board of Directors, using the first email address given in Article 2.3 of this document, and in a form approved by the Directors from time to time which shall ensure that a member is

bound by the Byelaws, rules and policies of the Company if their application is approved.

3.2. Admission to Associate Membership

Decisions to approve applications for Associate Membership must be made unanimously by the members of the Board of Directors. They must be reported promptly to the Members Council, which can be effected by an announcement in the Company's Basecamp organization. The Board must refer any application which they cannot agree upon for determination by the Members Council.

3.3. Admission to Voting Membership

Decisions to approve applications for Voting Membership will be made at the latest by the next meeting of the Members Council, or by a written resolution of the Members Council.

3.4. Subscription fees for Voting Members

After taking advice from the Members Council, the Board of Directors shall establish each year the annual membership subscription fees for Voting Members. These shall include fees of ascending size for individuals, non-profit institutions, commercial companies, and organizations who wish to sponsor the work of the Company (the last category being "Sponsor Members"). The difference between the fee for a Sponsor Member and a commercial company Voting Member shall be at least as large as the audit support fee established by the Board of Directors in accordance with Article 7.3 of these Byelaws.

Article 4 — Directors, Members Council and Officers

4.1. Board of Directors

The Board of Directors consists of the Chair, the Vice-chair and between one and three other Directors.

The Board of Directors is responsible for the day-to-day management of the Company and should appoint from within its membership one person primarily responsible for each of the following areas:

- a) Financial Management: dues collection, payment of taxes, payment of expenses.
- b) Secretarial Management: board meeting minutes, membership and task force list administration.
- c) Communications Management: press releases, website, social media channels.

4.2. Members Council

- a) The Company shall establish a Members Council the objects of which are to advise and direct the Board as to the strategic and business wishes of the members in relation to the ongoing business of the Company. The Members Council will be responsible for the consideration and recommendation of new standards and the establishment of new Task Forces and will advise the Board of its recommendations which it wishes the Board to consider and, if considered appropriate, implement.
- b) The initial members of the Members Council shall be the persons who were immediately before the date of adoption of this version of the Byelaws directors of the Company unless they notify the Board of Directors that they do not wish to take up such positions.
- c) Any oorganization that is a member of the Company may appoint and remove an individual representative to be its authorised representative on the Members Council by written notice to the Board of Directors.
- d) Any individual Member shall whilst a member of the Company be a member of the Members Council but may resign by written notice to the Board.
- e) Proceedings for any formal meeting of or written resolutions of the Members Council will be effected under the rules and procedures stated in the Appendix to these Byelaws. The provisions relating to notices and electronic communication for members and Directors set out in the Articles shall apply likewise to the Members Council.
- f) The Directors will be entitled to attend any meetings of the Members Council and receive any notices sent to members of the Members Council at the same time.

4.3. Secretary and Treasurer

The Board may appoint a Secretary and a Treasurer of the Company, who may be the same person.

The Secretary and Treasurer shall as a matter of course be invited to take part in meetings of the Board of Directors and of the Members Council in an advisory capacity, and to receive routine notices sent to members of both bodies, although either body may exceptionally decide to hold a meeting to consider confidential business which is restricted only to its voting members, or to similarly restrict the circulation of notices relating to such business.

4.4. Appointments and resignations

The appointment or resignation of a Director, and of the Chair, Vice-chair, Secretary or Treasurer of the Company, and of an individual representative of a member which is an Oorganization, and of a member of the Members Council shall be notified promptly to all of the above persons.

Article 5 — Task Forces and Working Groups

5.1. Task Force Scope

The Company undertakes to define high-quality benchmarks relevant to specific application scenarios. A Task Force coordinates technical development activities in a well-defined direction, typically having to do with

- a) the development of a benchmark inclusive auditing rules, as well as to
- b) training and qualification of auditors for a particular benchmark, as well as to perform
- c) maintenance on an already existing benchmark, as well as to
- d) arbitrate on disagreements over the validity of benchmark results and practices¹

Further:

- e) A Task Force may be working on multiple benchmarks at different stages of their lifecycles.
- f) Each benchmark that has been adopted (and not retracted) by the Company shall have one Task Force responsible for it.

5.2. Task Force Organization

- a) A proposal to create a Task Force, accompanied by a written Work Charter specifying its mission, scope of work and intended outputs, and including other introductory materials or proposals, shall be circulated to members of the Board for consideration either at a Board Meeting or as a written resolution to be decided by electronic vote.
- b) Any major change or extension to the Work Charter of an existing Task Force, including but not limited to its mission, scope of work and intended outputs, shall be circulated to members of the Board as a written proposal accompanied by a new version of the Work Charter, for consideration either at a Board Meeting or as a written resolution to be decided by electronic vote.
- c) Each new or amended version of a Work Charter of a Task Force once agreed by a decision of the Board shall be given a distinguishing number and shall be recorded in the list of Task Forces and Working Groups referred to in Article 2.1 e).
- d) The form of a Work Charter must include at least the information required to complete the Appendix: Work Charter Pro-forma, of these Byelaws.

¹The rationale for organizing arbitration of issues of interpretation and compliance under a Task Force is that the Task Force responsible for the benchmark in question is the most likely place where both competent and concerned parties may be found.

- e) The decision to disband a Task Force, like the decision to start one or amend a Work Charter, is made by the Board of Directors.
- f) All members of a Task Force shall be individual members (that is, Directors or Associate Members) of LDBC, or employees or other agents of organization members.
- g) All Directors have the right to appoint a person as member to a Task Force. These are called Appointed Members. Task Force members do not need to be Directors and do not need to be employees of Company member organizations or be affiliated with these.
- h) At least annually, each Task Force elects a Task Force Leader by simple majority.
- i) Task Forces may appoint or remove additional Task Force members beyond the Appointed Members. They may do so either by a decision of the Task Force Leader, or by a simple majority vote of the existing members, which shall supervene over a contrary decision by the Task Force Leader.
- j) The actual member list of each Task Force (names and contact details) are kept up-to-date within ten business days after each change on a web page specified in Article 1.1. This list should include by which member (if any) they are appointed and also list the Task Force Leader.
- k) Task Forces should meet at least once a quarter physically, or by electronic means (conference telephone call or by internet). For each of these (potentially virtual) meetings, the Task Force Leader ensures that on the web page named in Article 2.1 e), within ten business days a written, audio or visual record of meetings is retained that show (at least) which Task Force Members were present in the meeting as well as recording decisions and action points.

5.3. Working Groups

A Working Group is created, and its Work Charter may be amended; its membership is composed; it conducts its business; and it is disbanded in the same way as a Task Force. The goals of a Working Group are not restricted to work on benchmark specifications or tools, but they must contribute to promoting the objects of the Company.

Article 6 — Benchmark Adoption, Retraction and Maintenance

6.1. Minimum Benchmark Adoption Requirements

A benchmark specification in the form of a single readable document shall satisfy the following criteria before it is eligible for adoption:

- a) It defines a primary metric and a price-performance metric.

- b) It defines a scaling rule that defines how results at different size are to be reported.
- c) It defines a validation dataset that allows checking that an implementation produces correct results.
- d) It defines an Executive Summary for result disclosure.
- e) It defines a Full Disclosure Report, including a set of files and run logs that must be disclosed along with a result.
- f) It defines a set of auditing requirements that apply to a benchmark execution and can be validated by an auditor.

The software components of the benchmark (e.g. data generators, work load generators, and non-vendor specific drivers) have the following requirements:

- g) They have been reasonably tested.
- h) Their use is reasonably documented and this documentation is publicly available.
- i) The source code is publicly available in a version control system.
- j) The code is released under an open-source licence.
- k) There is a public system for reporting and tracking software issues.

The benchmark has been successfully implemented:

- l) The draft specification has been subject to a standard-establishing audit on at least two different software systems. A standard-establishing audit is conducted by the task force and (unlike regular audits) can be performed on a system without a price metric.

6.2. Maintenance of Benchmarks

After a benchmark has first been adopted, the Task Force which has produced it will be initially responsible for its ongoing maintenance and for review of results and resolution of challenges relating to the benchmark.

Maintenance comprises:

- a) Overseeing the auditing process and accepting new benchmark results, and posting these on the Company website.
- b) Retracting outdated or challenged results from the Company website.
- c) Defining and changing auditing materials and guidelines.
- d) Training and qualifying benchmark auditors.
- e) Developing extensions and changes to an existing benchmark specifications.
- f) Developing and changing benchmark software.

Article 7 — Benchmark Results

7.1. System Under Test

The totality of hardware and software used for obtaining a benchmark result is called the System Under Test (SUT). This is the set of items that is priced for obtaining a price/performance metric.

7.2. Price Metrics

The price/performance metric of LDBC benchmarks is based on the concept of Total Cost of Ownership over three years, covering the costs of the hardware and software, as well as support for both, needed for reliable and continuous operation of the System Under Test of the benchmark workload.

In particular, the cost metric of official LDBC benchmark results must be computed using the TPC pricing specification version v2.0 as available via the Transaction Processing Council (<http://www.tpc.org/pricing/>).

7.3. Test Sponsor

A “Test Sponsor” is the legal entity which submits a result. This will usually be a company but may also be an individual, especially in instances where a research organization submits a result.

A Test Sponsor must be a member of LDBC at the time when tests are conducted whose results are submitted for audit. A Test Sponsor who is not a Sponsor Member of LDBC must pay an audit support fee to LDBC which shall be set by the Board of Directors.

Test Sponsors must have the written permission of the holder of the trade mark (which may take the form of a suitable licence) of each component in a SUT which is referred to in the test result. For the avoidance of doubt: the intention is to avoid “hostile competitive audits” and to ensure that audited tests are conducted only when there is no incentive to neglect available optimisations that would affect the performance of the SUT; the intention is also to not require evidence of permission for the use of sub-components whose performance is not being reported with the expectation of comparison (such as third-party network or logging libraries, or hardware devices which are not relevant to the Test Sponsor’s business). The LDBC-approved auditor is expected to exercise their professional judgement to ensure that the spirit of this rule is being observed.

Copies of each such trade mark use permission must be submitted to the LDBC approved auditor as part of the results (but need not themselves be published on the LDBC website). The results of a test that is conducted without such permissions are,

by definition, not LDBC benchmark results and will not be published as such on the LDBC website.

7.4. LDBC Benchmarks[®] and LDBC Benchmark[®] Results

This section 7.4 and the following sections 7.5 and 7.6 together constitute the “Fair Use Policy for LDBC Benchmarks[®]”, and shall be reproduced prominently under that heading, with any necessary explanatory notes, on the public LDBC website.

LDBC expects all its members to conscientiously observe the provisions of this Fair Use Policy for LDBC Benchmarks.

LDBC-approved auditors must bring this Fair Use Policy for LDBC Benchmarks to the attention of any prospective or actual Test Sponsor.

The Board of Directors of LDBC is responsible for enforcing this Policy and any alleged violations should be notified to info@ldbcouncil.org.

- a) An “LDBC Draft Benchmark[®]” is a benchmark specification and any associated tooling or datasets, which has been written by an LDBC Task Force or Working Group whose charter includes the goal of achieving adoption of that specification as an LDBC standard, in accordance with Article 33 of the Articles of Association of the Company, “Approval of Standards”.
- b) An “LDBC Benchmark[®]” is an LDBC Draft Benchmark once it has been adopted as an LDBC standard.
- c) A result of a performance test can be fairly described as an “LDBC Benchmark Result”, if the test—which may be executed in several runs all of which use the same System Under Test (SUT) —has been successfully audited by an LDBC-approved auditor, and the result is reported as part of an LDBC Benchmark Results set, so it can be interpreted in context.
- d) An audit can only be successful if the audited test
 - a. uses a SUT which faithfully implements the mandatory features and chosen optional features of an LDBC Benchmark^{®2},
 - b. completely exercises and generates results for all the mandatory requirements and chosen optional requirements of the LDBC Benchmark[®], and
 - c. is conducted and audited in conformance with all the relevant provisions of the LDBC Byelaws, including the statement of Total Cost of Ownership for the SUT and the reporting of price/performance metrics, such that the reported results can legitimately be used to compare the price-weighted performance of two SUTs.

² An example of an optional requirement is a scale factor. A test may be conducted on one or more datasets which are of different scale factors, which can be chosen by the Test Sponsor. The results of two audited tests using the same LDBC Benchmark at the same scale factor are comparable.

- e) “LDBC Benchmark Results” is a set of all the results of a successfully audited test. A single LDBC Benchmark Result must be reported as part of such a set.
- f) Any description or depiction of a specification that states or implies that it is an LDBC Draft Benchmark or an LDBC Benchmark when that is not the case is an infringement of LDBC’s trademark in the term “LDBC BENCHMARK”, which is registered in several major jurisdictions.
- g) The same trademark is infringed by any software which is described or promoted as being an implementation of an LDBC Draft Benchmark or LDBC Benchmark, but which does not faithfully implement the features of or does not support the mandatory requirements of the stated specification.
- h) The same trademark is infringed by any report or description of one or more performance test results which are not part of a set of LDBC Benchmark Results, or in any other way states or implies that the results are endorsed by or originates from LDBC.
- i) LDBC considers the use of that trademarked term with respect to performance test results solely in accordance with these Byelaws to be essential to the purpose and reputation of the Company and its benchmark standards.

7.5. Reporting of LDBC Benchmark[®] Results

Once an auditor has approved a performance test result, including all required supporting documentation, as being successfully audited, then the Members Council and the Task Force responsible for the benchmark will be notified.

The Board will have the results added to the LDBC web site as an LDBC Benchmark Results set according to the following procedure:³

- a) LDBC members will receive notification of the result via email to their designated contacts within five business days of LDBC receiving the notification.
- b) Within five business days of this notice, the LDBC administrator will post the result on the LDBC web site under the rubric “LDBC Benchmark Results” unless the result is withdrawn by the Test Sponsor in the meantime.
- c) A result may be challenged and subsequently be withdrawn by the LDBC following a review process as described in Article 7.6.

³ The rationale for this procedure is that benchmark results may be important tools for marketing and may have to be timed to coincide with other activity. Hence the publication delay must be predictable and potential competitors must not be in a position to pre-empt a result publication. The challenge procedure may however bring to light non-compliance.

- d) A result that is not challenged within 60 days of its publication will be automatically considered valid and may not be challenged after this time, and this fact will be recorded as part of the website posting of the result.

7.6. Fair Use of the trademark LDBC BENCHMARK®

Any party wishing to avoid infringement of the trademarked term “LDBC BENCHMARK” should follow the following guidelines relating to its fair use.

LDBC encourages use, derived use, study, descriptions, critiques of and suggestions for improvement of LDBC Draft Benchmarks and LDBC Benchmarks®. Our benchmark specifications are open-source, and we always welcome new contributors and members.

These guidelines are only intended to prevent false or confusing claims relating to performance test results that are intended to be used for product comparisons.

- e) If your work is derived from an LDBC Draft or standard Benchmark, or is a partial implementation, or if you are using part of one of our standards for a non-benchmarking purpose, then we would expect you to give attribution, in line with our Creative Commons CC-BY 4.0 licence.
- f) We would also suggest that you make a statement, somewhere, somehow, that includes one of these phrases “This is not an LDBC Benchmark”, “This is not an implementation of an LDBC Benchmark” or “These are not LDBC Benchmark Results”.
- g) We would also suggest that you explain, however briefly, how your work is related to LDBC standards and how it varies from them.

An example that illustrates these points: one might say something like this in a presentation:

“We used the LDBC SNB benchmark as a starting point. This isn’t the official LDBC standard: we added four queries because of X, and we don’t attempt to deal with the ACID requirement. The test results aren’t audited, so we want to be clear that this is not an LDBC Benchmark test run, and these numbers are not LDBC Benchmark Results. If you look at this link on the slide I’m showing you can see all the details of how our work is derived from, and varies from the SNB 2.0 spec”.

Or one might say:

“For this example of a GQL graph type we used the LDBC SNB data model. This is nothing to do with the actual LDBC benchmark specification: we just used their data model as a use-case for illustrating what a graph schema might look like. We took this from the SNB 2.0 spec.”

7.7. Challenging Benchmark Results

- a) To initiate a Benchmark Result Challenge, the alleged policy violation must be submitted to the relevant Task Force via email, copying the original Test Sponsor. The submission must include a precise description of the alleged violation.
- b) Both parties, the original Test Sponsor and the Challenger, are encouraged to resolve the issue among themselves at this point. If the Challenger has not withdrawn the challenge after a waiting period of fifteen business days, the Task Force will put the issue on its agenda. The Test Sponsor is asked to write a rebuttal of the Benchmark Result Challenge to the Task Force, copying the Challenger.
- c) The Task Force will review the issue, and determine by simple majority vote whether a violation has occurred and its severity. Besides technical issues, the Task Force will also take into account the degree of severity (insignificant, minor or major) in formulating its response, as well as any history or a recent pattern of violations by the same Test Sponsor. The Technical Area Committee will organize meetings until a decision is made.
- d) The Challenge Response formulated by the Task Force is a binding decision within the LDBC for which no further appeal process exists.

The response measures outlined below are the expected outcome in most circumstances. However, the Task Force retains the right to take other response measures if necessary under extra-ordinary circumstances. In all cases the response measures will seek to be fair, reasonable, and appropriate.

- a) For insignificant violations the Task Force will send a response to the involved parties and take no further action.
- b) For minor violations, the Task Force will inform the Members Council that a minor violation has occurred. It is assumed that the Test Sponsor has already taken correction actions which are reflected in an updated result posting. If not, the Members Council sends the Test Sponsor a letter outlining the nature of the violation, asking for appropriate corrective actions that should lead to an updated re-audited result within fifteen business days. If the corrective actions have not led to an updated result after that time, then the challenged result is to removed from the LDBC website.
- c) For major violations, the Task Force will inform the Members Council that a major violation has occurred. The Members Council then must remove the challenged result from the LDBC website and sends the Test Sponsor a letter outlining the nature of the violation. In addition, the Task Force may issue a fine (limited to maximally 3 years of Company Member Dues) or remove all other results from the Test Sponsor from the LDBC website. According to the seriousness of the issue, it may recommend the Board of Directors to issue a

press release outlining the nature of the policy violation, and, in extreme cases, might initiate expulsion proceedings.

Article 8 — Benchmark Auditing

8.1. Benchmark Auditors

An Auditor is an individual authorized by a Task Force to audit a benchmark for which that Task Force is responsible. The authorized Auditors must be listed on the Company website and when changes occur this must be reflected there within ten business days.

8.2. Auditor Compensation

A Test Sponsor will engage an Auditor to establish and confirm the correct conduct and successful outcome of an audited test before submitting the results of the test.

The compensation of the Auditor is agreed upon between the Test Sponsor and the auditor.

8.3. Auditor Qualification

An individual may apply with the Company to be approved as an auditor for one or more benchmarks maintained by it.

The Task Force will interview the auditor and hold an examination where the auditor answers questions relevant to the benchmark in question and general issues of system performance evaluation. Having reviewed these, the Task Force can approve the auditor by simple majority within the Task Force.

8.4. Auditing by the Task Force itself

As a special case, which applies for instance if there are no qualified Auditors yet for a particular benchmark, the Task Force may again by simple majority, as set forth above, decide that the Task Force collectively or a designated individual member of the Task Force will audit a result.

8.5. Auditor Independence

The auditor of a Benchmark Result may not be affiliated to the test sponsor and must otherwise be independent of the test sponsor. The conditions of payment between the Test Sponsor and Auditor

- a) must be based on an hourly tariff and,
- b) must be disclosed to the Members Council and
- c) may not depend on the outcome of the benchmark audit.

8.6. Audit Requirements

- a) For systems using dedicated hardware (such as physical servers, specialized machines, etc.), an audit should be possible via remote access to the SUT. The remote access must grant the auditor administrator privileges, preferably a remote console via IPMI⁵ or equivalent. This makes it possible to simulate an instantaneous failure such as a power outage by remotely powering down a system. For systems running in a cloud-based environment, the auditor should set up the system based on the documentation, software components and other artifacts (licences, configuration files, etc.) provided by the test sponsor. System failures such as a power outage shall be simulated using the administration console provided by the cloud environment.
- b) The specific requirements for storage durability and other concerns are defined in the audit rules section of each benchmark.
- c) The auditor shall perform the test execution via remote access. The auditor may communicate with the test sponsor via teleconference or other means.
- d) A benchmark result is not a valid LDBC result unless the audit is completed and the required supporting material is made publicly available in electronic form.
- e) An attestation letter by the auditor will be published as part of the Full Disclosure Report. This is a signed document which specifies the date of the audit and states that the result is compliant to the best knowledge of the auditor after due review. The attestation letter can be linked to the executive summary by electronic signature to prevent later tampering.

Article 9 — Communications

9.1. Confidentiality

All internal communication between LDBC members that the Board of Directors has marked confidential must be treated as LDBC confidential. LDBC confidential information must not be disclosed to any non-member without prior approval by the Board.

No Member may speak to the press or the public at large on behalf of the LDBC other than the Board and its designated representatives.

⁵ https://en.wikipedia.org/wiki/Intelligent_Platform_Management_Interface

9.2. Fair Use

LDBC benchmark results are potentially important marketing assets. For these results to be publicly used, their use must satisfy the following criteria:

- a) A result may not be designated as an LDBC benchmark result unless it is an official result listed on the LDBC website at the time of the communication.
- b) A result may not be designated as an LDBC result if the result has been challenged and removed.
- c) The LDBC name, logo, or LDBC metrics may not be used in reference to qualitative statements in reference to a product, unless this is a mention of a currently listed official result on the LDBC website and the usage is in compliance with the LDBC Trade Mark Policy issued by the Board of Directors from time to time pursuant to Article 10.6.

Article 10 — Intellectual Property Rights

10.1. IPR Assets

The IPR management for LDBC covers these asset types created by members of the LDBC or participants in any LDBC activities:

- a) Software Components (for benchmark or other standards, and contributions to external standards)
- b) Specification documents (for benchmark or other standards, and contributions to external standards)
- c) Auditing Rules (for benchmarks)
- d) Academic papers, articles, explanatory materials, analyses, reports and presentations, whether published by LDBC or elsewhere
- e) Documentation for processes and procedures
- f) Benchmark Results, both Executive Summaries and Full Disclosure Reports

LDBC IPR management also covers Brands, being names and/or logos related to benchmarking and standards-setting activities of the LDBC, such as its own name, its benchmarks and benchmark metrics.

10.2. Copyright

The copyright in the IPR Assets defined in Article 10.1 a) to f) are allowed to remain with their original copyright holder. The copyright in all contributions to materials as defined in Article 10.1 a) to f) shall be licenced to the LDBC on the basis set out in Article 10.3 below. Copyright in LDBC materials made available to third parties shall be licenced in accordance with Article 10.4 below.

10.3. Inbound Licences

- a) The LDBC requires that contributors of Code (including Members) do so on the basis of a modified Apache contributor licence agreement, including Apache-style patent provisions, the terms of which shall be determined by the Board of Directors from time to time.
- b) The LDBC requires that contributors of documentation and other non-Code content (including Members) do so on the basis of a modified Apache contributor licence agreement without a patent licence the terms of which shall be determined by the Board of Directors from time to time.

10.4. Outbound Licences

Materials specifying Benchmarks, Benchmarking Practices, Benchmark results (together “Benchmark Materials”), adopted in accordance with Article 5.1, must be open to the public. For such Benchmark Materials, two licences have been adopted:

- a) For all Software Components of Benchmark Materials the Apache 2.0 Licence, <https://www.apache.org/licences/LICENCE-2.0> will be used

The LDBC will take adequate and specific measures to ensure that the software it releases in its public repositor(ies) as specified in Article 2.1 f) properly complies with this intention while protecting the IPR rights of LDBC.

- b) The Creative Commons Attribution 4.0 International (CC BY 4.0) Licence <https://creativecommons.org/licenses/by/4.0/>

will be used for non-code publications which are part of Benchmark Materials.

The LDBC may licence materials other than Benchmark Materials listed under Article 10.1 a) to f) to any party on such terms as the Board of Directors sees fit provided that such terms are consistent with its mission to make such standards and materials as freely available as reasonably possible to the public.

10.5. Patents

Participants (including Members) in activities of LDBC are required to comply with the LDBC Patent Rules as determined by the Board of Directors from time to time.

The LDBC shall not apply for patents on its own behalf, nor grant or seek to grant any patent licence or sub-licence to any third party (including any Member).

10.6. Trade marks

LDBC may establish, register and use anywhere in the world trade marks, names, domain names and logos (together “Brand Assets”) related to its core mission, such as its own name, “LDBC”, its benchmarks, and its benchmark metrics. It may maintain and renew such applications as it considers appropriate. It may take such action as it considers necessary or desirable consistent with its objects to protect, defend and assert the rights in Brand Assets (both registered and unregistered). It may licence

Brand Assets on terms consistent with its objects as are determined by the Board of Directors from time to time. It may establish policies and guidance in the use of and reference to Brand Assets, consistent with its objects. Such policies will, upon approval by the Board of Directors, immediately become binding on members of LDBC (irrespective of whether the policies are internal or are outward-facing). Nothing in these Byelaws or the Articles of Association of LDBC grants any Member a licence in respect of any Brand Assets.

Appendix 1: Work Charter Pro-forma

Name of Task Force or Working Group

Proposed or current leader

Permanent or Ad-Hoc⁶

Date established

Charter version number

Date charter version agreed by Board

Mission

Motivation

Scope of Work

Intended output documents

- LDBC standard, including a high-level view of scope and likely contents

- Informative or ancillary specifications not intended to be an LDBC standard

- Contributions to external specifications

- Other documentation

Other intended outputs/work product

- Software libraries or services

- Datasets

- Other outputs

Intended timescales

Related Task Forces or Working Groups

References to relevant documents, standards, etc.

⁶ A Permanent TF/WG (like the Benchmark TF) is expected to exist continuously. An Ad-Hoc TF/WG is expected to complete some tasks and then disband or be re-chartered for a new set of tasks.

Appendix 2: Procedures for the Members Council

These procedures can be modified by the Members Council from time to time.

This initial version of the procedures was agreed by the Board of Directors on 28 February 2023.

1. Regulation of proceedings

- 1.1. The members of the Members Council may regulate their proceedings as they think fit, subject to the provisions of the articles.

2. Convocation of meetings

- 2.1. The Chair or Vice-chair or directors comprising one third of the total number of directors may call a meeting of the Members Council.
- 2.2. A meeting may be held by suitable electronic means agreed by the members of the Members Council in which each participant may communicate with all the other participants.
- 2.3. Four weeks' notice in writing of a meeting of the Members Council to take place in person shall be given to each member of the Members Council. One weeks' notice in writing of a meeting to be held by suitable electronic means in accordance with paragraph 2.2 shall be given to each member of the Members Council.

3. Chairing of meetings

- 3.1. The Chair shall chair meetings of the Members Council or in his or her absence the Vice-chair.
- 3.2. If the Chair or the Vice-chair are unwilling to preside or is not present within ten minutes after the time appointed for the meeting, the members of the Members Council present may appoint one of their number to chair that meeting.
- 3.3. The person appointed to chair meetings of the Members Council shall have no functions or powers except those conferred by the articles or these rules of procedure, or otherwise delegated to him or her by the Members Council.
- 3.4. Questions arising at a meeting shall be decided by a majority of votes and the person seated in the chair at any meeting shall have a casting vote.

4. Quorum

- 4.1. No decision may be made by a meeting of the Members Council unless a quorum is present at the time the decision is purported to be made. "Present" includes being present by suitable electronic means agreed by the members of

the Members Council in which a participant or participants may communicate with all the other participants.

- 4.2. The quorum shall be the number nearest to one-third of the total number of members of the Members Council or such larger number as may be decided from time to time by them.
- 4.3. A member of the Members Council shall not be counted in the quorum present when any decision is made about a matter upon which that member of the Members Council is not entitled to vote.

5. Written or electronic resolutions

- 5.1. A resolution in writing or in electronic form agreed by a simple majority of all the members of the Members Council entitled to receive notice of a meeting thereof and to vote upon the resolution shall be as valid and effectual as if it had been passed at a meeting of the Members Council or (as the case may be) a committee of directors duly convened and held provided that:
 - 5.1.1. a copy of the resolution is sent or submitted to all the members of the Members Council eligible to vote; and
 - 5.1.2. a simple majority of the members of the Members Council has signified its agreement to the resolution in an authenticated document or documents which are received within the period of 28 days beginning with the circulation date.
- 5.2. The resolution in writing may comprise several documents containing the text of the resolution in like form to each of which one or more members of the Members Council has signified their agreement.