Adscription Agreement of L-NET Validators and Boot Nodes

In Montevideo, _____, __ ,202__, between **AS PARTY TO THE FIRST PART**: the **Blockchain networks operator for Latin America, and the Caribbean (L-NET)** (hereinafter "LNET"), represented in this act by <u>XX YY</u> in his capacity as Chairman of the Board of Directors/Executive Director/Agent, with domicile at *Calle Rambla República de Mexico* 6125, and **AS PARTY TO THE SECOND PART**: Name of Applicant _____ (hereinafter the "Applicant"), represented in this act by <u>YY JJ</u> in his/her capacity as Chairman of the Board of Directors/Executive Director/Agent, with domicile at _____, (hereafter jointly the "Parties") agree to enter into this agreement (hereinafter "the Agreement"):

FIRST (Background):

1.1 L-NET, as an international nonprofit civil association engaged in the administration, operation, and facilitation of the Blockchain, and DLT infrastructures, and other associated resources in the Latin America, and the Caribbean regions, which, under the principles of absence of commercial interest, and technological neutrality, has developed the infrastructure called *Red LACNet Omega* (hereinafter the "Network" or "LACNet Omega Network" indiscriminately).

1.2 That the Applicant, shares with L-NET the common interest in guarding, and developing the Blockchain, both in the initial phases of experimentation, as well as in the implementation of business on the previously tested Blockchain, and to that extent, cooperate for the joint purpose to develop, and maintain the Network.

1.3 That the Applicant, is interested in operating one or more validator or boot nodes on the Network, performing the authorization, permissioning or validation of the transactions that integrate the Network blocks, in the terms and conditions that are detailed in this Agreement.

SECOND (Objective):

The purpose of this contract is to establish the conditions in which the Applicant will operate one or more validator or boot nodes of the LACNet Omega Network by performing authorization, permission or validation of the transactions that compose the LACNet Omega Network blocks, operating under the principles of absence of commercial interest, and technological neutrality.

THIRD (Applicant obligations):

The Applicant is obliged to:

a) To deploy and operate one or more validator or boot nodes in the Network, for which it expressly declares to comply with, know, and accept the Statutes of L-NET, and its documents **Attachment A "Governance and Operation Policies of the LACNet Omega Blockchain Network"**, **Attachment B "Memberships, Access, and Support of the LACNet Omega Blockchain Network "**.

b) Expressly declares to know, and accept that in no case will some nodes respond to others for direct or indirect damages arising from any non-compliance without gross negligence of the Network's maintenance commitments, and other provisions in the multilateral agreements, and in Policies, guidelines, and other operating agreements between the members, and the latter, and L-NET, including but not limited to any loss of income, or loss of profit, and any consequential damage of any of the natural or legal persons managing nodes, due to business interruption, loss of data, or damage to equipment among other adverse effects. This clause will be applicable even when any of the nodes have agreed to liability clauses contrary to this limiting clause. The only consequence of non-compliance will be the exclusion from the Network, if applicable to the non- compliant node in accordance with the statutes, and regulations of L-NET.

c) To include liability exemption clauses in their contracts with users, and/or clients of the LACNet Omega Network, in accordance with the provisions in Clause Seven of this Contract.

d) To comply with the applicable laws, and regulations that rule or regulate their activity or necessary for the execution of this Contract, including especially those related to treatment and protection of data, competition, intellectual property, as well as the contractual obligations that it has assumed with third-parties unrelated to L-NET, and must be regularly registered with the competent public entities, and up to date with the payment of their tax obligations.

e) To operate in the Network diligently, in the form and conditions that it deems appropriate according to their own technical criteria, protecting infrastructure, safety, quality and stability, and acting at all times in accordance with the statutes of L-NET, its different Attachments (current and future), Governance and Operation Policies of the LACNet Omega Blockchain Network, its technical specifications, and rules contained in the development standards approved by the L-Net Board guidelines, and other operating agreements among members, and between the latter, and L-NET, and modifications to these.

f) To allow and facilitate its validator node or boot to connect with all the L-NET nodes following the directions of the L-NET Technical Team, so that the connections routing between observer, writer, validator, and boot nodes is optimum.

g) To prevent the validator node or boot from connecting with nodes or servers that L-NET has not indicated through the L-NET Technical Team, expressly declaring a commitment not to grant permission, or access from the node to any third-party node that has not been formally authorized within the formal mechanisms established by L-NET and included in the official list of nodes that is available in the official L-NET repository.

h) To allow and facilitate its validating or boot node to reject all transactions - and therefore not replicate any of its pars or propose them in invalid blocks, according to the criteria established in the Technical Requirements for the Operation of Nodes. In the event that the LACNet OMEGA Network monitoring detects that the Applicant's validator node or boot is not processing

all the transactions in compliance with the foregoing, or that it is replicating, and introducing in blocks transactions that are non-compliant with the above, the L-NET Technical Team will proceed to the automatic exclusion of that node, and will contact via email the people in charge to clarify the incident. L-NET is committed to determine within seventy two (72) hours after clarifying the incident if the Applicant can return to the Network.

In the event that the Applicant is not readmitted, it is considered to be in non-compliance with the obligations of this Contract, giving rise to its termination without the right to compensation thereof, as established in paragraph a) of the clause 5.2 of this Agreement.

i) To allow and facilitate its validator node or boot to process, replicate with all its pars, and propose in blocks, when it is their turn, all the transactions that are valid according to the criteria established in the Technical Requirements for the Operation of Nodes. In the event that monitoring of the LACNet OMEGA Network detects that the Applicant is not complying with this clause, the L-NET Technical Team will proceed with automatic exclusion of that node, and will contact via email the people in charge to clarify the incident. L-NET is committed to determine within seventy-two (72) hours after clarifying the incident if the Applicant can return to the Network.

j) To have the boot node process, and replicate with all its pars all the valid transactions, according to the criteria established in the Technical Requirements for the Operation of Nodes.

k) To keep your validator or boot node in resilient and monitored conditions (uptime + 95%). In the event that the Applicant fails to comply with this clause, the L-NET Technical Team will proceed to automatically exclude that node, and will contact via email the persons in charge to clarify the incident. L-NET is committed to determine within seventy two (72) hours after the clarification of the incident if the Applicant can return to the Network.

l) To accept the improvements, and updates (e.g., Software or Ethereum versions) proposed by the L-NET Technical Team, and presented according to the Services, and Functionalities, and the Statutes according to the decisions reached in the General Assembly.

m) To prevent your validator node or boot (implies non acceptance) to vote for invalid blocks according to the established criteria in the Technical Requirements for the Operation of Nodes. In the event that in monitoring the Network it is detected that the Applicant is voting through invalid blocks, the L-NET Technical Team will proceed to automatically exclude that node, and will contact via email the persons in charge to clarify the incident. L-NET is committed to determine within seventy-two (72) hours after clarifying the incident if the Applicant can return to the Network.

n) To allow and facilitate your validator or boot vote node (approve) new validating nodes or boot as indicated by the L-NET Technical Team. Nodes rotation will at all time be conducted according to public, and transparent rules, and will seek maximization of resilience, and decentralization.

ñ) To accept the changes (e.g., Software or Ethereum versions) proposed by L-NET, and presented according to the Services and Functionalities, and the Statutes as determined in the General Assembly.

o) To assume their own responsibility for the proper functioning of their node according to the obligations arising from the provisions in the Governance, and Operation Policies of the LACNet Omega Blockchain Network, and in this Adscription Agreement.

p) To assume exclusively any liability arising from agreements entered into by the Applicant, and operators of writer nodes, third parties and/or end users, granting the fullest indemnity to L-NET, and the rest of the nodes unrelated to those commitments.

q) In the event that it ceases to be part of L-NET and/or the LACNet Omega Network, to commit to maintaining its node on the Network for the time that ensures compliance with its commitment to operate on the Network protecting its infrastructure, and acting at all times in accordance with the Statutes, and other L-NET standards and protocols, up to a maximum of fifteen (15) days.

r) Not to assign or transfer this contract in any way.

s) To assume all costs, and taxes derived from the development of its activity. In this sense, L-NET will not be obligated with to the Applicant to pay any benefit, reimbursement or complementary economic benefit of any kind, beyond discounts to the L-NET social quota that are established in the Sixth clause and Attachment B of this Agreement.

t) To designate a technical contact to join efforts with the L-NET Technical Team.

u) To have the right to participate in L-NET as an affiliated partner in accordance with the rights and obligations established by its Statutes, Resolutions of its assembly and directors, as well as other established attachments and policies.

FOURTH (L-NET Obligations):

L-NET is obliged to:

a) Allow the connection as a validator node or boot of the Applicant to the LACNet Omega Network by registering that node in the permissioning contract. The right of connection will be offered by L-NET on best efforts, not guaranteeing that the Network will operate without errors, or interruptions, nor that all errors and/or interruptions will be corrected, or that it will meet the requirements, and expectations, as established in Clause 7.3 of this Agrement.

b) In the case of validator nodes, to allow the Applicant's node to participate in the generation of blocks following the rules established in **Attachment A "Governance and Operation Policies of the LACNet Omega Blockchain Network"**.

c) Allow the Applicant to participate in the governance of the entire Network as established in **Attachment A "Governance and Operation Policies of the LACNet Omega Blockchain Network"**, and, if appropriate, according to the decisions adopted by the majority of Applicants that maintain the validator, or boot nodes, be compensated for operating it in the terms the L-NET competent entities may determine.

d) Provide through its Technical Team, tech support for any technical problem of interaction between node, and Network with first response in less than 24 hours.

e) Coordinate the escalation of Network failures at the protocol level with Consensys Pegasys, the main team behind the open source technology used by the LACNet Omega Network with whom L-NET maintains a support agreement.

f) Allow network access only to those Applicants who complete the registration process specified in the Permissioning Policies, as well as to notify the Applicant of any change in these policies with a minimum fifteen (15) days in advance regarding its execution.

g) The obligations established in this clause, may be modified according to modifications introduced to Governance and Operations Policies of the LACNet Omega Blockchain Network.

FIFTH (Duration):

5.1 This contract will come into force once the Applicant's node is registered in the LACNet Omega Network, and will be of indefinite duration, and either party may unilaterally terminate it by notifying the other party by reliable means. The contract will terminate fifteen (15) calendar days after the date on which one of the parties communicates to the other its willingness to terminate it by reliable means, and the termination will not give the right to claim damages, a term that may be extended at the request of the Applicant, one time only, and for an additional fifteen (15) calendar days.

Notwithstanding the foregoing, the Applicant will be allowed access to the data of the transactions carried out on the Network for a period of three (3) months counted from the termination of the Contract.

5.2 Likewise, L-NET may terminate this Contract at any time, without entitlement to compensation, and communicating it in writing to the Applicant, in the event that:

a) The breach by the Applicant of the main obligations that this Contract imposes.

b) The attempt to harm and/or attack the Network in some way.

c) The Applicant's node cannot meet its active node role, as established in **Attachment A "Governance and Operation Policies of the LACNet Omega Blockchain Network**" on more than three (3) occasions during the last 90 days.

d) The bankruptcy, fraud, dissolution or insolvency, judicial or extrajudicial liquidation of the Applicant.

e) The lack of compliance with the rules of payment of the membership to L-NET, in case it applies to validator or boot nodes.

f) By total or partial assignment of the Contract without authorization from L-NET.

SIXTH (Price):

Without prejudice to the L-NET membership fees established by its Directory, and which are included as a reference in **Attachment B "Memberships, Access, and Support of the LACNet Omega Blockchain Network"**, and will publish an update on the L-NET website (http://LACNet.lacchain.net), the connection to the LACNET Omega Network will not imply any financial commitment between the Parties, nor will they entitle them to any economic consideration between them, including any expenses, and contributions necessary to operate as a Writer Node of the Network, by the Applicant.

SEVENTH (Responsibilities and Guarantees):

7.1 Between the Applicant and L-NET: In no event shall L-NET, and the other Applicants (writer node operators), be liable to L-NET and/or others for direct or indirect damages arising from any breach without gross negligence of the network maintenance schedule and others provided for in this Agreement, and/or in the Policies, guidelines, and other operating agreements between the members and these, and L-NET as the case may be, including without limitation any loss of income, or loss of profit, and any consequential damage to any of the natural, or legal persons operating the nodes, due to business interruption, data loss, or equipment damage, among other adverse effects. Likewise, and notwithstanding the foregoing, in no case will the total liability of L-NET, whether contractual, or non-contractual, exceed the annual membership established in Clause Six hereof.

This clause will be applicable even when an Applicant has agreed to liability clauses contrary to this limiting clause. Failure to include non-restrictive clauses will also have as a result of this non-compliance, the exclusion of the Applicant as an Affiliate Partner of L-NET and LACNet Omega Network.

7.2 Between a Third-party and L-NET: By virtue of the fact that there is not, and will not be any contractual link between L-NET, and a client, or end user of the LACNet Omega Network, who contract with the Applicant, the Applicant undertakes to establish limiting liability clauses in the same manner as clause 7.1 above.

Declaring L-NET, and its other Applicants that they decline any civil, contractual or extra contractual liability to end users of the LACNet Omega Network, for any failure, fall, interruption, or systemic operational, or performance deficiency, directly or indirectly attributable, for any cause or concept, to the use of computer media, implementation

mechanisms, systems, codes of all kinds, or software on which the operation, and function of the Network is based. The absence of contractual responsibility is based on the absence of a contract, or bilateral legal relationship between any client, and L-NET, without prejudice to the contractual relationship that may exist between each Applicant, and the user.

7.3 Warranty: L-NET does not guarantee that the LACNet Omega Network will operate without errors or interruptions, nor that all errors and/or interruptions will be corrected, nor that it will meet the requirements and expectations. The responsibility of L-NET's will consist solely of correcting the deficient services, and providing technical support, and in the event that they cannot be substantially corrected, to allow the termination of the Contract, refunding the price paid.

To the extent that the law does not prohibit it, this is the only exclusive guarantee granted, and there are no other guarantees neither express or implied, on the LACNet Omega Network, its software, hardware, systems and/or environments, or its quality, merchantability, or fitness for a particular purpose.

7.4 Free Software: L-NET declares that the proposed software, as well as possible developments that could be carried out for its contribution, and availability to the Applicant, is based on legal principles, and rules of the collaborative philosophy of the Open-Source Software or Software "Free" open source with author recognition, in particular, the following:

A) The original license of the source code allows you to reuse it without new agreements with the creator, or issuer of the code, except author recognition.

B) No user or third-party that enters into a contract with it for illegal use of free software, due to the absence of a commercial relationship between the creator of the software and users.

C) No third-party can claim damages, or harm to their counterparts that provide services, or provide digital goods, based on deficiencies, failures, or software defects, or operating systems used in an open, or free regime.

EIGHTH (Confidentiality Obligation):

Each Party undertakes to maintain the confidentiality of all the information it receives, or that comes to their knowledge from the other party, under this Contract, and to protect it from all forms of disclosure, taking appropriate provisions and caution for this.

The obligation of confidentiality does not cover the existence of this Contract, or the fact that the Applicant is operating validator, or boot nodes in the Network, as well as the identity of said nodes. L-NET makes public the list of entities operating nodes in the Network for transparency purposes.

NINTH (Intellectual Property):

9.1 With the exception of the right to use the Network that is expressly awarded by L-NET, under this contract, the Applicant will not be able to invoke any right, title or interest on it, and its updates and/or additional developments, as well as on contributions that the Applicant does to the Network to improve its operation. It is understood that the developments made by Applicants who use the Network for the deployment of projects or applications "on top" correspond to said Applicants who create these developments, to which it is allowed to include intellectual property licenses about their developments, as long as this license does not include the Network itself, parts of it, or tools developed, or enabled by L-NET.

9.2 L-NET grants the Applicant a non-exclusive worldwide license, and without the cost of royalties from the brands found in Attachment C, during the term of this contract, to indicate that it is a validated node or boot of the LACNet Omega Network. The Applicant agrees that this contract does not grant any license, or some type of L-NET intellectual property rights different from the expressly indicated, so the Applicant undertakes not to use, market, distribute, or in any other manner dispose of the intellectual property of L-NET. In the event that the Applicant wishes to use L-NET's intellectual property outside the expressly granted license, the Applicant must have the express, and written authorization of L-NET.

TENTH (Indemnity):

10.1 The Applicant must maintain totally, and permanently harmless and/or indemnify, where appropriate, to L-NET, as well as its managers, officials, dependents and/or agents, concerning any expense, loss or damage that any of them could suffer or responsibility that could be contracted, due to, and/or related to the fulfillment of this Contract, as well as with any act, omission or operation that is carried out by virtue of the provisions of the same, and any claim, action or judicial proceeding, or administrative tending to exercise, protect, and enforce the integrity of any right under this Agreement, including the costs, and professional fees incurred with respect to such claims, actions or procedures;

Likewise, the Applicant shall reimburse L-NET within the third day of the intimation made in this regard by the latter, all the sums that L-NET is forced to pay by virtue of any claim, or judicial or administrative nature, provided that L-NET has notified the claim for the purpose of making the case downloads.

The lack of payment of the sum due, and owing within the indicated period will incur the Applicant in automatic default with the amount owed accruing an interest equal to the rate that applies the Central Bank of Uruguay for Discount of Documents 180 days, without prejudice of L-NET's right to execute your credit. The lack of compliance with the aforementioned obligation of the previous three (3) days will entitle L-NET to proceed with the immediate termination of the Contract, and to claim the damages, and interests that correspond.

10.2 The Applicant, hereby expressly waives any claim, or recovery right that it may have against L-NET for damages, while it is not proven that such situations had their origin in causes attributable to the breach by L-NET or its employees.

ELEVENTH (Contract Assignment):

The Applicant must not assign, to any person, and to any title, its rights, and emerging obligations under this contract, unless it has prior, express, and written consent of L-NET.

The use licenses granted in this contract are non-transferable, and non-exclusive.

TWELVE (Declaration):

The relationship established on the basis of this Contract, is a commercial relationship between independent companies, without any working-class subordination. Relations between the Applicant, and its employees, or subcontractors, and between the subcontractors, and its employees, are alien to L-NET, and the entire responsibility of the Applicant. No employee hired by the Applicant and/or its subcontractors is linked to L-NET by any employment relationship.

THIRTEENTH (Force Majeure):

13.1 None of the Parties shall be responsible for the delay in compliance, or non-compliance with the obligations of this Agreement, nor for the exercise of the rights that derivate from it, nor for any loss or emerging damage, provided that said delay, non-compliance, or exercise has been prevented, or obstructed totally or partially by:

(i) Compliance with laws, regulations, or decrees of government agencies, and orders, judgments, and/or decisions of jurisdictional, and/or regulatory entities; or

(ii) Reasons of force majeure, which include, but are not limited to: wars (declared or not declared), hostilities, strikes/riots, civil disturbances, terrorist acts, blockages, quarantines, pandemics, strikes and/or other labor disturbances of a general nature, forced closure, or industrial action of any kind, explosion, fire, flood or any type of natural catastrophe, temporary or permanent interruption, of any nature, in the electric power supply, telephone, telecommunications, or other transmission, or public, or technological service, loss, or shortage of means of transportation, breakdown of machinery or equipment, and any other natural, technological, political or economic cause, not been caused by the negligence of the party that alleges said contingency, or by any other phenomenon of nature or case of force majeure, similar to any of the aforementioned, that cannot be overcome by the latter through the use of reasonable diligence, and without causing excessive expenses.

13.2 The party that is affected by force majeure will notify the other in writing within twenty-four (24) business hours, of the contingency that has occurred, specifying the cause, and the estimated time of its duration. In this case, the rights, and obligations of any of the parties affected by any of the contingencies described above will be suspended for the duration of the aforementioned contingency, and it must make all efforts to mitigate the effects that it could have on the other party, the alleged contingency. Likewise, the affected party will notify in writing the resumption of the fulfillment of the contract when the said event has ceased.

The following will not be considered as force majeure:

(i) Strikes, work on regulations, or work suspensions of personnel hired by the Applicant, or its subcontractors, caused by breaches by the Applicant.

(ii) Any act, or omission that is wholly or partially attributable to the party alleging force majeure.

13.3 During the time of the fortuitous event, or force majeure, the obligations of the parties will be considered suspended, which will be resumed as soon as said cause ceases.

FOURTEENTH (Default):

The default in compliance with the agreed obligations will be automatic, and lawful, without the need for interpellation of any type, and by the mere fact of breach of the obligations assumed.

FIFTEENTH (Omissions):

The fault or delay by any of the parties in the exercise of any right, faculty, or privilege that the present contract confers to it will not constitute a waiver, or release of the same, or partial exercise of any right, faculty, or emerging privilege arising from this will prevent exercising the rest.

SIXTEENTH (Special Domiciles and Notifications):

For all the judicial and extrajudicial effects to which this Agreement may give rise, the Parties set as a special domicile:

a) L-NET: *Rambla Republica de Mexico 6125*, Montevideo.
b) The Applicant: _____Street and number ____, _CITY__, COUNTRY__.

In the absence of mediating formal communication to the other party of any variation that occurs in this regard, all communication, notification, intimation, or similar will be considered valid to be practiced by means of a suitable means that are directed to the domiciles indicated.

SEVENTEENTH (Partial Invalidity):

In the event that any or some of the clauses of this Contract, are declared null, void, ineffective, or not owing by a court or competent authority, the remaining clauses will not be affected by the said declaration, and will retain its validity, effectiveness, and/or enforceability to the greatest extent permitted by law. Any invalid or inexistent provision will be renegotiated by the parties, in order to replace it with a provision that is valid, and required, and that better reflects the original intention of the invalid, or inexistent provision.

EIGHTEENTH (Declaration):

The undersigned declare under oath that they exercise the representation invoked with sufficient faculties for the granting of the present.

NINETEENTH (Modifications to the Contract):

With the exception of the amendments to the **Attachment A "Governance and Operation Policies of the LACNet Omega Blockchain Network",** any modification that is introduced to this Agreement, must be done in writing, and with the consent of both parties, under penalty of being considered absolutely unopposable by the party in front of whom it attempts to assert.

TWENTIETH (Arbitration).

20.1 In case of differences, disagreements, and controversies between the parties, deriving from this Contract, they will seek to solve them through the conciliation of the Conciliation and Arbitration Center of the Uruguayan Stock Exchange (the Center), carried out in accordance with the provisions of the Conciliation Regulations of said Center. In the event that it is not possible to reconcile them, these differences, disagreements, and controversies will be definitively resolved through arbitration in law, observing for the arbitral procedure, the provisions contained in the Center's Arbitration Regulations. The number of arbitrators will be three, the seat of the arbitration will be in Montevideo, and the process will be carried out in Spanish.

20.2 The Party that initially resorts to arbitration must notify the Secretary-General of the Center, and the other party of its intention to submit any matter to arbitration, in full accordance with the rules of "Arbitration Procedure" of the Center's Regulation.

20.3 When the arbitration hearing is granted (which must be granted within fifteen (15) calendar days subsequent to the notification mentioned above), each party will designate an arbitrator of its choice or, failing that, one will be appointed by the Center from its payroll. Within ten (10) calendar days of said appointment, the appointed arbitrators should appoint the third arbitrator, and if there is no agreement within the following five (5) calendar days, one will be appointed by the Center from the list of people that make up its Arbitration Roster. The third arbitrator will preside over the Arbitral Panel.

20.4 The ruling of the Arbitral panel will not be subject to further appeal, with the exception of the appeal for annulment provided in the General Code of Procedure.

TWENTY FIRST (Applicable law and competent jurisdiction).

21.1 This Agreement will be governed by the laws of the Oriental Republic of Uruguay.

21.2 Notwithstanding the provisions of the preceding clause, the Uruguayan courts will be competent to deal with all matters excluded from arbitration, the proceedings prior to arbitration, the execution of the award, and the appeal for annulment against it, as provided in the General Code of the Process.

And as final proof, two (2) copies of the same document are signed in the established place and date.

Attachment A

Governance and Operation Policies of the LACNet Omega Blockchain Network

The Operator of the Blockchain Networks for Latin America and the Caribbean (L-NET) (hereinafter "Organization" or "L-NET"), as a civil association of a nonprofit international administration, operation and facilitation of the Blockchain, and DLT infrastructures of L-NET, and other associated resources in the Latin America and the Caribbean regions, which, under the principles of the absence of commercial interest, and technological neutrality, which has developed the infrastructure called LACNet Omega Network (hereinafter the "Network", or "LACNet Omega" indistinctly), it is orchestrated by a series of governance and operation policies that apply to all its members, and partners that operate Writers, Validators, and/or Boot in any of their Networks, which will be addressed in this document.

I) About the Network Governance

Those who get memberships, and/or are Active, Affiliated and/or Institutional members of the L-Net entity, hereinafter the community of members, share with L-NET the common interest of monitoring and developing the Network, both in the initial phases of experimentation as well as in the implementation of business on it, previously tested, and to that extent, cooperate for the joint purpose of developing and maintaining the Network.

According to the Statutes of entity L-NET, L-NET renders accounts as a service provider and requires orchestrating an organization of civil association of a non-profit international nature that is called L-NET.

In this regard, the first version of the Network policies will have been defined by the technical staff of L-NET and can be accessed in **Chapter 1 "Technical-Operative Specifications of LACNet."**

These specifications are updated by means of a consensus of the community members that hold a membership with the LACNet Omega Network, by discussing in an Official Regular Labor Forum, with whom they want to participate formally following the guidelines stated in **Chapter 2 " Development Process of Technical-Operative Specifications of LACNet"**, to collect and study the needs, and proposals of the community of members of the LACNet Omega Network, and then structure them, discuss them, to prioritize them and formalize them as proposals for change to the "Technical Operative Specifications of LACNet."

These proposals discussed in an official work forum are regularly presented to the L-Net Board of Directors for approval, or rejection as the case may be, by the representatives elected by the community of members who participate, or have formally participated in the work forums,

representatives who should also comply with the requirements according to the "L-Net Statutes" document, available on the LACNet website (https://LACNet.lacchain.net).

The "LACNet Technical-Operative Specifications Development Process" is a fundamental part of the services provided by the Network. It is through this process that the creation and modification of Network policies are validated.

The "LACNet Technical-Operative Specifications Development Process" describes the guidelines of the process in its two modalities: normal and expedited, the mechanisms that allow its operation, and the appeal system.

II) About Network Operation

The L-NET Operational Team orchestrates the distributed operation of the Network according to the "LACNet Technical Operational Specifications."

In general terms, L-NET provides the legal and organizational structure is maintained by a technical, and operational team of specialists responsible for orchestrating the governance and distributed operation of the Network in accordance with the service conditions stipulated in the "Adscription of Writer Nodes", and the characteristics of the memberships detailed in this document, which is alert to attend to any incident that is reported through the Tickets tool to the Operational Team, and respond within a guaranteed period of time.

Figure 1 shows the general structure offered by L-NET for the orchestration, governance and decentralized operation of its Network so that members and partners can run their Use Cases:
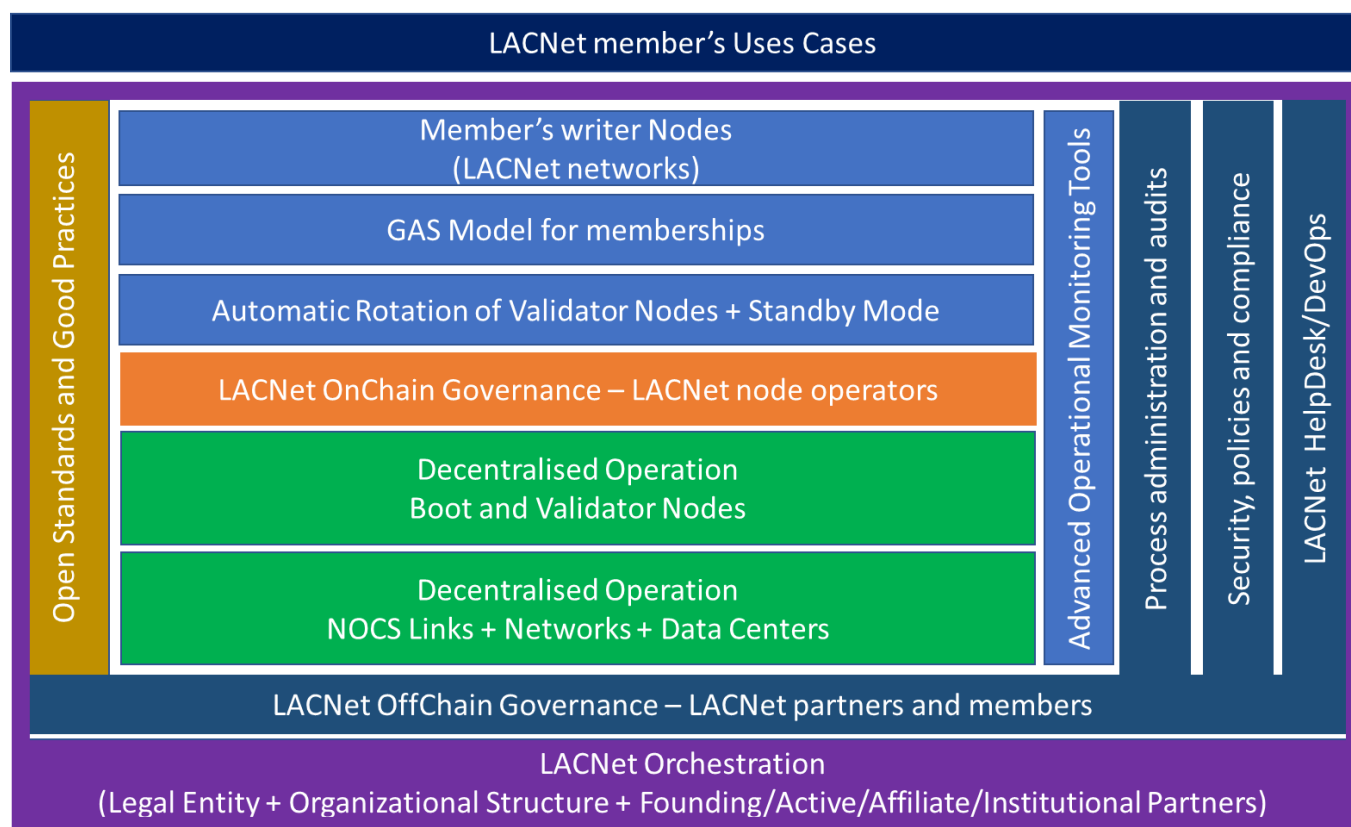
Figure 1. General structure of governance and decentralized operation of orchestrated networks by L-Net.

L-NET is governed by a Board of Directors that is advised by its partners.
Types of Partners:
- Founders (IDB-LAB, RedClara, LACNIC)
- Assets (by invitation)
- Affiliates (clients with memberships participate)
- Institutional (by invitation)

The co-founding partners of L-NET, together with the IDB-Lab, Red Clara, and LACNIC, are neutral multilateral entities that operate within the framework of Internet governance.

The off-chain governance of the Network is managed, and administered by the LACNet Omega Network with its Operational Team, and it is in charge of provisioning and permitting of the Network, the incorporation or removal of writer nodes, validators, and boot nodes, the inventory of incorporated nodes, customer support for memberships, collection of payments and administrative, and company management activities in general.

In the following image, the flow of the permission process of a validator node is described:
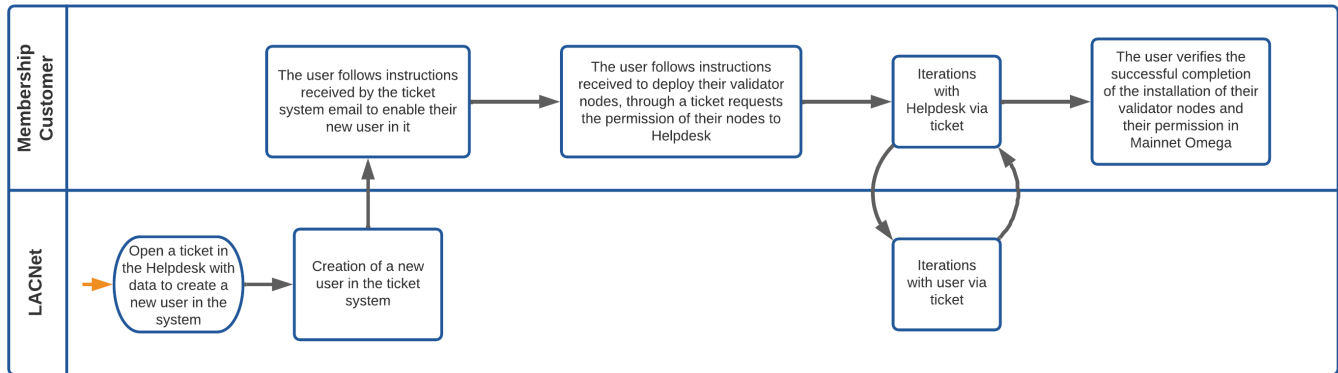
Membership Customer

- The user follows instructions received by the ticket system email to enable their new user in it
- The user follows instructions received to deploy their validator nodes, through a ticket requests the permission of their nodes to Helpdesk
- Iterations with Helpdesk via ticket
- The user verifies the successful completion of the installation of their validator nodes and their permission in Mainnet Omega

LACNet

- Open a ticket in the Helpdesk with data to create a new user in the system
- Creation of a new user in the ticket system
- Iterations with user via ticket

Chart Legend:
— ◯ Start   ▭ Process

The on-chain governance of the Network is carried out based on the margin described in **Chapter 1 "LACNet Technical-Operative Specifications"** and in **Chapter 2 "LACNet Technical-Operative Specifications Development Process"** respectively.

Its objective is to determine, with the consensus of the members of the community of members, and partners, the formation, and conduct of the Network and its components, in terms of its configuration and conduct to meet demand optimally and safely.

Chapter 1

"LACNet Technical-Operative Specifications"

I) Types of nodes and Network topology

The Network has four types of nodes: validators, boot, writers, and observers. Each node has a different role, which means that their rights and duties are different. The characteristics of the nodes are the following:

- **Validator nodes**: The main task of the validator nodes is the block generation by participating in the proof of authority consensus protocol, specifically IBFT 2.0. These nodes must connect with all the validator and all the boot nodes, as indicated in the rules of the permissioning agreement of the Network that these nodes are configured to follow by default. Validator nodes must not be connected to any writer nodes directly.

- **Boot nodes**: Boot nodes serve as a proxy to connect validator nodes with writer and observer nodes. They also serve to share with newly permissioned nodes the transaction history, and the current state of the Network, as well as the list of nodes available to connect according to the connection rules established in the permissioning agreement. The boot nodes must connect to all the validators, and to those writers and observer nodes indicated in the permission agreement, for which they are preconfigured. The boot nodes serve as a first filter to identify invalid transactions in accordance with the provisions of Section 5 of this Annex.

- **Writer nodes**: The writer nodes have as their main task the introduction of transactions in the network from all kinds of services and applications (both centralized and decentralized). These nodes serve as a gateway to the Network for all entities that seek to benefit from its use both to register and to consult information. The sending of transactions to the Network is organized as described in Section 4 of this Agreement and the conditions of validity of transactions are established in Section 5. The writer nodes can connect with the boot nodes indicated in the permission agreement.

- **Observer nodes**: Observer nodes can see the transaction history and the state of the Network but cannot send transactions, participate in the consensus protocol or perform any task other than observing and consulting information on the network.

Figure 2 presents a scheme of the Network topology and connections between nodes, which is due to the topology established in the <u>LACChain framework for public permissioned Networks</u>. For the establishment of P2P communication between nodes, port 60606 (TCP/UDP), and for the connection between writers and applications or external services to the Network is proposed the use of port 4545 (TCP).
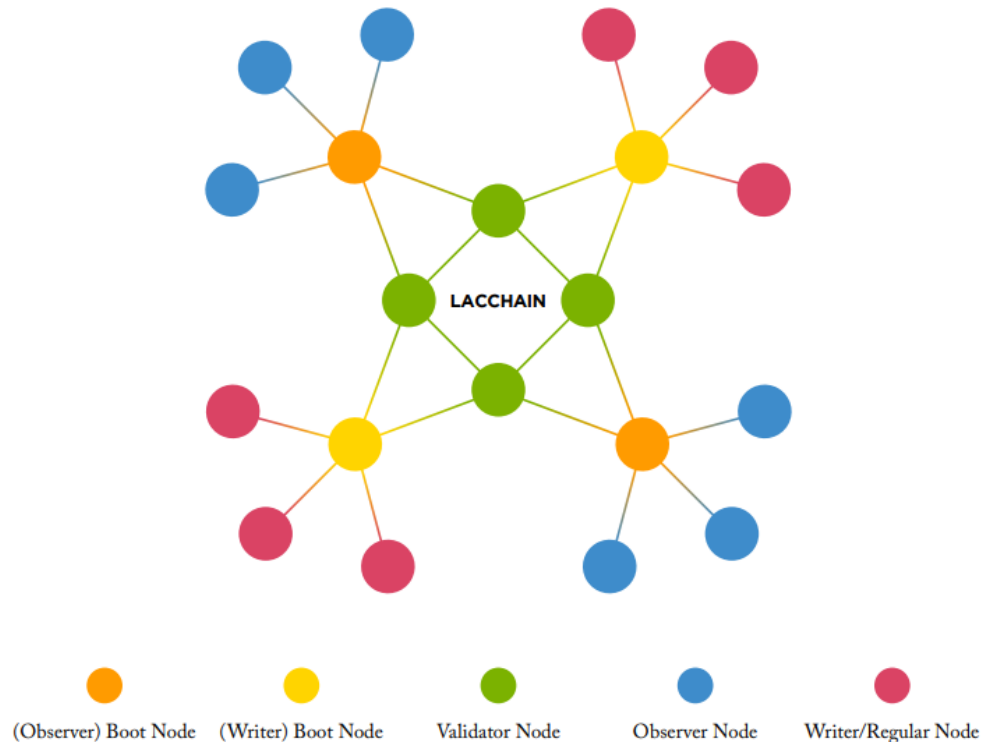

Figure 2. LACChain Topology applied to the networks orchestrated L-Net.

All nodes in their installation by default behave according to what is established in this Attachment. Any modification of the node by the company in charge of its operation must be carried out by ensuring that it does not affect compliance with the standards established in this Agreement.

II) Permissioning, de-permissioning, and re-permissioning of nodes

The permissioning of nodes in the Network consists of the registration of the identifier enode in the permissioning smart contract that all nodes in the Network must follow when establishing their connections. This contract is administered by the L-Net Operational Team in a totally transparent way.

The L-Net Operational Team permits and de-permits nodes in compliance with the conditions established in this Agreement, so that any entity that formalizes its relationship with L-Net by signing the Adscription Agreement and makes the corresponding membership payment will be authorized in the Network and will operate in it at the same hierarchical level as any other entity. In the event that an entity fails to comply with the conditions established in this Agreement, it will be de-permissioned, which implies the elimination of its enode identifier from the permission agreement, and the consequent blocking of the node by the rest of the Network nodes.

The re-permissioning of nodes that have been de-permissioned will be carried out in accordance with the processes for clarifying violations of the rules and policies for use of the Network described throughout this Agreement. In case of loss, misplacement or theft of control over the node, after notification by the Applicant as established in subparagraph g) of clause 3 of this Agreement, the compromised node will be terminated and the new one will be authorized node enabled by the entity as a replacement.

III) Network use management and GAS distribution mechanism

L-Net has developed a pioneer mechanism for the distribution of resources (GAS) in the Network that makes it possible to guarantee the availability of transaction logs for all writer node operators with limits established according to the contracted membership. This model eliminates the need for a transaction fee while preventing denial-of-service attacks. The model manages the GAS that writer nodes can use. The GAS is the magnitude in which the computational complexity that the execution of a transaction has for the nodes of an Ethereum-based network. The greater the complexity, the greater the required GAS.

The GAS distribution mechanism sets a limit of GAS per block that each writer node can consume. These limits are calculated automatically according to an algorithm developed by L-Net that depend on the type of membership contracted, and the degree of use of the network by the total set of writer nodes (the less used the Network is, the more GAS is available per block, and vice versa). There are three types of memberships (Basic, Standard, and Premium) whose characteristics, and prices are described in **Attachment B "Memberships, Access and Support of the LACNet Omega Blockchain Network"**

Thanks to the algorithm, the limits are constantly, and dynamically recalculated to guarantee the greatest possible optimization of the Network, and the results are exposed in the corresponding smart contract within this solution. The algorithm is as follows:

N_B: = Number of nodes with the Basic membership.

N_S: = Number of nodes with the Standard membership.

$N_P :=$ Number of nodes with a Premium membership.

$G_T :=$ Amount of GAS per block that the Network can process without operating in conditions of saturation.

$G_B :=$ Limit of GAS per block for writer nodes with a Basic membership package.

$G_S :=$ Limit of GAS per block for writer nodes with a Standard membership package.

$G_P :=$ Limit of GAS per block for writer nodes with a Premium membership package.

$\vartheta :=$ Fraction of G_T consumption on average during the last X blocks by all validating nodes with X being a modifiable parameter.

$$G_P = \left(-5 \frac{\theta}{G_T - (G_B N_B + G_S N_S)} + 6\right) \frac{G_T - (G_B N_B + G_S N_S)}{N_P} \text{ up to a maximum of } 0.5 G_T$$

This formula leads to the following scenarios:

$\vartheta = 0.2$	$G_P = 5 \dfrac{G_T - (G_B N_B + G_S N_S)}{N_P}$
$\vartheta = 0.4$	$G_P = 4 \dfrac{G_T - (G_B N_B + G_S N_S)}{N_P}$
$\vartheta = 0.6$	$G_P = 3 \dfrac{G_T - (G_B N_B + G_S N_S)}{N_P}$
$\vartheta = 0.8$	$G_P = 2 \dfrac{G_T - (G_B N_B + G_S N_S)}{N_P}$
$\vartheta = 1$	$G_P = \dfrac{G_T - (G_B N_B + G_S N_S)}{N_P}$

Table 1. Relationship between total GAS consumption, and GAS limit for writers with a Premium Membership.

An example of application of the algorithm is offered in **Attachment B "Memberships, Access and Support of the LACNet Omega Blockchain Network."**

The writer nodes are pre-configured with a component that performs a local accounting of the GAS consumed by the transactions that they send to the Network during the generation period of each block (which is two seconds on average under normal circumstances), for which they take into account the "GAS limit" parameter established in the transaction itself. In addition, at the beginning of each block, this same component consults the corresponding smart contract for how much GAS it can use as a maximum in that block. When the GAS limit is reached, the node stops sending transactions and returns an error for excessing GAS per block. Both the administrators of applications, and services connected to the Network, and the operators of writer nodes are recommended to manage queues that allow the re-sending of rejected transactions both for this, and for other reasons, which is a natural conduct given the asynchronous character of blockchain.

If a writer node sends a transaction to the network that exceeds the corresponding GAS limit, it will be automatically de-permissioned from the Network. The re-permissioning process of the node will be carried out according to the third Clause of this Contract, and the second clause of this Attachment.

IV) Validity conditions for transactions

Transactions sent to the Network must meet specific requirements to be considered valid. Transactions that do not meet these requirements will be rejected by the Network. Those nodes that are modified by their operators to accept invalid transactions will be automatically banned. The re-permissioning process will take place in accordance with the conditions established in this Contract. The requirements for transactions sent to the Network are:

• The destination of the transaction must be the smart contract named RelayHub.
• The GAS limit established for the transaction must guarantee the execution of the RelayHub smart contract (including the fixed and variable parts). The variable part depends on the number of bytes sent in the transaction, which guarantees the execution of the RelayHub and avoids out-of-GAS exceptions (errors).
• The GAS price set in the transaction must be 0, since the Networks orchestrated by L-Net have no cost per transaction.
• To guarantee that the transactions sent by services, and applications connected to the Network are not altered by the operators of the writing nodes that introduce them in the Network, or by any other malicious actor, the transaction must include two additional parameters to the parameters related to the target smart contract. These two parameters are "nodeAddress" and "expiration", and their values are the enode identifier of the writer node that you want to send the transaction to the Network and its expiration date. This guarantees that

only the selected writer node will be able to send the transaction and that it must do so before the indicated expiration date. Otherwise, the transaction will be rejected by the Network.
• Once the transaction sent by the service or application reaches the writer node that is going to introduce it in the Network, it must generate a new transaction that contains the original but that is sent by its own writer node account, which must be recorded in the account permissioning smart contract by the L-Net Operations Team (typically, this is known as a meta transaction). Any transaction that is not co-signed by the account of a writer node allowed in the Network will be rejected.

Writer nodes are pre-configured to build and sign these transactions automatically. Only the administrators of the applications, and services that build the transactions will need to add the two mentioned parameters to their transactions for their own security.

V) Rotation scheme of validator nodes

L-Net has developed a state-of-the-art validator node rotation scheme following the rules established in the LACChain Framework for public permissioned Networks. This scheme allows any entity with the technical capabilities, and operational commitment to operate a validator node to do so, providing decentralization, and diversity to the consensus protocol.

The scheme sets the number of active validator nodes to 11 and enables a pool of inactive validator nodes that are in constant rotation with the active ones. To determine the nodes to rotate, a scoring system is established for all the validating nodes based on their behavior that takes into account the processing time, and generation of blocks, the uptime, or the degree of decentralization that it contributes to the Network, among others.
For certain metrics, there are limits below which it is considered that the validator node is not working in an acceptable way. The established limits are as follows:

• The generation of less than 85% of the expected blocks
• The generation of blocks with an average time greater than twice the average of the rest of the validator nodes.
• An uptime of less than 95%

There are two types of node rotation procedures.
• Active nodes operating below-set limits are automatically rotated for inactive nodes.
• Active nodes operating properly accumulate a score. With a variable frequency, initially set to two weeks, active validator nodes are assigned a rotation probability that is inversely proportional to their score (the better their score, the lower their rotation probability), and based on those probabilities two nodes are selected out of eleven active nodes to be rotated by two inactive nodes. The management of probabilities allows avoiding determinisms in the selection that can play against the sound consensus protocol.

VI) Private Channels

The Network enables private channels at the optional disposal of writer node operators. Private channels allow you to establish private connections outside the Network. L-Net does not have access to or control of, and assumes no responsibility for, these private channels. Writer node operators who decide to establish them are entirely responsible for their use, and governance.

VII) Decentralized Storage

The Network enables IPFS-type decentralized storage solutions, and the like that allow writer node operators to record and share heavy folders. L-Net assumes no responsibility for these decentralized storage solutions. Writer node operators who decide to establish them are entirely responsible for their use.

Chapter 2

"LACNet Technical Operational Specifications Development Process"

1. Justification

The process of developing technical-operational specifications is a fundamental part of the services provided by the **LACNet** Omega Network (The Network), whose legal entity is called L-NET, and is incorporated in Montevideo, Uruguay. It is through this process that the creation, and modification of the technical-operational specifications that apply to their Blockchain Networks are validated.

This chapter describes the development process of the technical-operational specifications of the **LACNet** Omega Network in its two modalities: normal process, and expedited process. The latter will be used in exceptional cases when it is not possible to wait for the Open Forum presentation to the members, of the Network of technical-operational specifications.

As a definition for the rest of the document, it is understood that a proposal has reached consensus when it is supported by a significant majority, after extensive discussion, and there are no irrefutable technical objections.

2. Normal Process for the Development of Technical-Operative Specifications of LACNet

The development of the technical-operational specifications may go through the following phases:

• 　　　Open list of technical-operational specifications
• 　　　Moderators of the Open Forum (to members of the Network) of the technical-operational specifications
• 　　　Working groups
• 　　　Open Forum (to members of the Network) of the List of technical-operational specifications
• 　　　L-NET Directory

2.1. Open List of Technical-Operative Specifications

• 　　　To submit a proposal, you must have a LACNet membership, and first subscribe to the Open List of technical-operational specifications.
• 　　　Proposals for the List of technical-operational specifications can be received at any time.
• 　　　Proposals must be sent through the web form that can be found at:
　　　o 　　　https://LACNet.lacchain.net

o After being revised, an identification code will be assigned, and will be sent to the discussion list. The time for review, and publication of the proposal on the Open List should not exceed 2 weeks (only the text of the technical-operational specifications, not their merits) will be reviewed.

- The call for work groups will only be carried out through this list.
- Any call for the training of a working group should be supported by at least 5 subscribers to the Open List of technical-operative specifications.
- The call to nominations of candidates to moderators of the Open Technical Specifications List Forum will be carried out through this list every two years in inserted form.
- Only themes and points discussed in this list, at least 4 weeks before the Open List Forum of Technical-Operative Specifications will be taken to this forum for discussion and called to consensus.

2.2 Open Forum Moderators List of Technical -Operational Specifications

There will be two moderators of the open forum of technical-operating specifications of the LACNet Omega Network. Both will have the same functions.

2.2.1. Of the functions of the Moderators of the Open Forum of the List of Technical-Operative Specifications

• To lead and prepare the discussion of the Open Forum on the List of technical-operational specifications. The conducting will be done by one of the two moderators, being able to alternate throughout the event.
• To conduct the Open List of technical-operational specifications, and the Development Process of the List of technical-operational specifications in general.
• To evaluate and suggest minor changes to the texts proposed during the Open Forum for the List of technical-operational specifications before their call for consensus.
• To evaluate and suggest consensus in the discussion of the List of technical-operational specifications.
• To suggest the conclusion of the discussion of a particular topic in the Open List of technical-operational specifications.
• To decide to abandon a technical-operational specification.
• To call the creation of Working Groups in the Open List of technical-operational specifications.
• To receive comments from the L-NET team regarding various aspects of a technical-operational specification proposal. These commentaries may include, among others, comments on the editing of the text used, on the cost of implementing a proposal, on legal aspects, and on the place of a proposal in the LACNet technical-operational specifications list document.

2.2.2. About the Moderators of the Technical-Operational Specifications Open List Forum

• The Moderators of the Open Forum for the Development of the List of technical-operational specifications will not necessarily be part of the L-NET team.
• Honorary work.
• They must have at least one membership of the LACNet Omega Network or have the support of at least three membership holders of the LACNet Omega Network and have no opposition from other membership holders.
• The period of service will be valid for 2 years alternately, and with the possibility of unlimited renewal.

2.2.3. On the election of the Moderators

• Calls for applications will be made on the Open List of technical-operational specifications.
• All subscribers to the Open List of technical-operational specifications may participate in the election.
• The election will take place just before the Open Forum.
• It will be done electronically using mechanisms to limit one vote per person subscribed to the list.
• The winner of the electronic election will have to be ratified in the Open Forum. The acting moderators will consult those present if there are any objections to the electronic election process. If there are, the moderators will assess whether the objections are significant enough. If there are no objections or the moderators consider them insignificant, they will proceed to ratify the winner of the election. A moderator who participated as a candidate in the election will refrain from participating as a moderator during the ratification process.
• The chosen moderator will take office immediately after the end of the Open Forum in which he/she was ratified.
• If there is no ratified winner, the L-NET Board will appoint a moderator to fill the vacant position until the next Open Forum. At the next opportunity that an election and ratification can be held, the elected will serve only the remaining term.

2.2.4. Responsibilities and obligations of the Moderators

• To publish in the Open List the agenda of the next Open Forum on technical-operational specifications scheduled at least 2 weeks before the start of the Forum. To indicate, among other things, the proposals for technical-operational specifications that will be presented and discussed.
• To prepare a report on the Technical-Operational Specifications Open Forum that must be presented in the Open List no later than 1 week after Forum ended.

• To send to the Open List a call for discussion of the proposals presented in the Forum but that did not reach consensus, and that must return to the list for discussion within a maximum period of one (1) week after the Forum ends.

• To publish a last call for comments (last call) for the proposals that achieved consensus in the Open Forum within a maximum period of two (2) weeks after the Forum ends.

• Publish in the List of Technical-Operative Specifications the result of the last call for comments for proposals with consensus within a maximum period of 1 week after the end of the last call period.

• Communicate to the community, through the List of Technical-Operative Specifications, the results of the ratification, by the L-NET Board, of the Technical-Operative Specifications with the consensus that did not receive comments during the last call to comments period within a maximum period of 1 week after the publication of the minutes of the board meeting with the ratification.

2.3. Working groups

• Working groups will be optional. Its objective will be to facilitate the discussion of a particular topic.

• No limit on the number of participants.

• Created by call either from the Technical-Operative Specification Moderators, of the L-Net Directory or the L-Net Partner Assembly.

• The results of the Working Group should be published on the Open List of Technical-Operative Specifications, at least 4 weeks before the Open Forum of Technical-Operational Specifications. These results will be considered as recommendations for the Open List of Technical-operative Specifications.

2.4 Open Forum of Technical-Operative Specifications

• Analysis of the discussions considered in the Open List of Technical-operative Specifications.

• Make minor modifications in proposed texts (which do not change the sense of the proposal) before the call to consensus.

• Decision making based on consensus. Moderated by the moderators of the Open Forum of Technical-operative Specifications.

• After the Open Forum of Technical-Operative Specifications, forum moderators can perform three actions with a proposal presented:

○ If consensus is reached, it will be published on the Open List of Technical-operative Specifications Open to commentaries for 45 days.

○ Or if consensus cannot be reached the proposal can be returned to the Open List of Technical-operative Specifications to continue its discussion.

○ If no consensus is reached, the specification may be abandoned and deleted from the list of proposals for Technical-operative Specifications under discussion by members who have LACNet Omega Network memberships.

• A proposal that is returned to the Open List of Technical-operative Specifications to continue its discussion that, is neither reviewed nor presented at the next Open Forum of Technical-operative Specifications, will be automatically abandoned after it.

• Spaces will be offered for the presentation of topics of interest for the Open Forum of Technical-operative Specifications.

2.5 L-Net Directory

At its first meeting after 45 days of open commentaries, the L-Net directory may:

• Accept the proposal. Analyze with the staff the implementation date and make the announcement.

• Reject the proposal, and request to the Open Forum of Technical-operative Specifications, through the moderators of the Open Forum of Technical Specifications, to go deeper in its analysis and make a new proposal.

• Declare the removal of one or both moderators of the Technical-Operational Specifications Forum if the breach of its/their functions, in the 6 months following the last forum of Technical-Operational Specifications, hampers the development process of Technical Specifications-Operations. The Board of Directors will be responsible for submitting the acting substitute(s) within a maximum period of two (2) weeks, who will act until the next election.

• Additionally:

• It can call the creation of Working Groups in the Open List of Technical-operative Specifications.

• It will be responsible for the process of choosing the Moderators of the Open Forum of Technical-Operational Specifications.

2.6. Meeting of Partners

• If evidence is found, it may suspend a Technical-Operative Specification. If this is the case, the Assembly will send a notification, through the L-NET Directory, to the Open List of Technical-Operative Specifications.

• It may also call for the creation of Working Groups in the Open List of Technical-Operative Specifications.

3. Expedited Process for the Approval of Technical Operative Specifications-

In exceptional cases, a proposal for Technical-Operating Specifications may follow an expedited path without the need to be presented at LACNet's Technical-Operating Specifications Open Forum.

A proposal for a Technical-Operative Specification with expedited treatment will be analyzed by both Moderators of the Technical-Operative Specifications Open Forum who must agree that it justifies the expedited procedure.

After this stage, the technical-operational specification will be entered in the Open List of Technical-operational Specifications.

With a minimum of 60 days after the presentation in the list, the Moderators of the Open Forum of Technical-Operative Specifications will evaluate whether the discussion calls for a consensus on the aforementioned proposal or to the abandonment of the expeditious process.

If the Moderators agree that the proposal must be called to consensus on the Open List of Technical-operative Specifications, the call will be made with a minimum time of 14 days for receiving opinions.

Once the period of reception of opinions is closed, the moderators of the Open Forum of Technical-Operative Specifications will communicate if the consensus was reached.

In a positive case, they will elevate the proposal to the L-Net directory.

In a negative case, you can choose between leaving the expeditious process and continuing the discussion on the Open List of Technical-operative Specifications or leaving the proposal definitely.

After the consensus has been reached on the open policy list, the L-Net directory may:

• Accept the proposal. Analyze with the staff the implementation date and make the announcement.
• Reject consensus and request the Technical-Operating Specifications Open List, through the Moderators of the Technical-Operating Specifications Open Forum, to go deeper in its analysis, and make a proposal at the next Technical-Operating Specifications Open Forum.

Any policy proposal approved through the expedited procedure must be presented at the next Open Forum on Technical-operational Specifications, in order to inform the community about its implementation.

4. Responsibilities and obligations of L-NET and the moderators of the Open Forum of the LACNet Omega Network

• Act as a secretary in the process of developing technical-operational specifications and providing support to the List and the Open Forum of Technical-operational Specifications: maintaining the discussion list, and its archive; guaranteeing a space to carry out the Open

Forum in its events; helping the Moderators during the Open Forum; updating the website with information about the development process, proposals under discussion, and archives of previously submitted proposals, and their status; maintaining, and updating the technical-operational specifications, and the history of updates; assisting in the organization of the Moderators' elections.

• Communicate about the implementation of the proposals ratified by the Board of Directors, as soon as this occurs, through the List of Technical-Operative Specifications.

Attachment B

Memberships, Access and Support of the LACNet Omega Blockchain Network

To be able to connect to the Network by deploying a writer node in it, it is necessary to acquire one or more memberships, and sign this Writer Node Adscription Contract.

Unless this document indicates otherwise for one or several memberships in particular, by default the memberships consider the final use of the writer nodes of the Network by the contracting party, that is, that the Network access service considered in a Membership through a Writer Node may not be resold to third-parties.

The following three types of memberships are offered, whose current respective annual contract prices are published on the LACNet website (https://LACNet.lacchain.net) and which are expressed around the consumption of "GAS" as the magnitude that represents the available resources of the Network infrastructure, and that allows to guaranteeing its equitable distribution among the members according to the memberships under contract to send and register transactions in the Network, to compile and register smart contracts in the Network, to prevent the use of the Network by unauthorized users, and as a general defense mechanism against denial of service attacks.

Basic type membership: A maximum consumption of GAS per block of 500,000 is permitted.

Standard type Membership: A maximum consumption of GAS per block of 1,500,000 is permitted.

Premium type membership: A maximum consumption of GAS per block of 4,000,000 is permitted.

Additionally, premium membership nodes may occasionally share the surplus gas available on the network, if any excess exists. This distribution will be dynamic, varying depending on the use of the network at all times to try to offer a gas limit as high as possible to each premium node without the network being saturated or there are going to be delays in the generation of blocks. For this, the gas distribution algorithm devised and developed by LACNET is applied, which was described in the third section of the first chapter of the **Attachment A "Governance and Operation Policies of the LACNet Omega Blockchain Network".**

Figure 3. Estimates of average GAS consumption in the Network in normal conduits for certain transactions.

Transaction Type	Estimated amount of GAS consumed
Change of a simple attribute type Uint256	120 K
Notarization/fingerprint (registration of a hash)	140 K
Token transfer	145 K
Registration of a verifiable credential	275 K
ERC20 contract deployment	1M
Deployment of complex Smart contract	3M

* These estimates vary depending on each transaction and correspond to an average

In order to acquire a membership, it is necessary to comply with the following requirements:

1. **Legal requirements**

a. Complete the registration form found on the LACNet website when hiring a membership (http://LACNet.lacchain.net)
b. The information required by the form is:
• Name of the entity -> must be the name of the entity's social reason in the country of origin, and not that of the brand nor the fantasy name
• Tax address of the entity
• Country of origin of the entity
• Single national or tax identifier of the entity (Tax ID, DNI, RUT, NIT, etc.)
• Names and surnames of the legal representative of the entity
• National Single Identifier of the Legal Representative of the Entity (Tax ID, DNI, Ruth, Nit, etc.)
• Type of Membership Selected
• Number of nodes to contract under that membership
• Type of entity: Startup, University, Government, NGO, Other: Specify in the text field at the end along with the purpose
• Purpose of using the Network
• Names and Surnames, Phone Number, and Corporate Email of the Technical Manager of the Writer Node
• Names and Surname, Phone number and corporate email of the administrative or business manager of the Writer node
• Text field: Brief description of the entity
• Text field: Description of the purpose of use of the writer node in the LACNet Omega Network

c. The information entered in the form will be reviewed by the LACNet staff in order to know the tax information of the interested party to issue the invoices, and collect the corresponding payments, the number of memberships, and nodes in which you are interested in deploying, the type of institution that hires the or services, contact information of the legal representative, among others, and a general description of their activities on the Network. According to what is entered into the form, more information is requested in relation to it, in order to determine possible special benefits according to what is published on the LACNET website (http://LACNet.lacchain.net)

2. Technical Requirements

a. In order to deploy a node, it is required to have its own system dedicated with the following recommended characteristics as a reference:
  • CPU processor: 4 cores
• RAM memory: 16 GB
• Hard Drive: 150 GB SSD – 70,000 iops read and 50,000 iops write
• Operating System: Ubuntu 16.04, Ubuntu 18.04, Ubuntu 20.04, Centos7, always 64 bits

b. The updated information on the characteristics, and the updated details of the instructions to deploy a node are available in the GitHub repository of the LACNet Network (https://github.com/lacchain/besu-mainnet/blob/main/DEPLOY_NODE.md), and the reference to the latest version of the said repository is also available on the LACNet website (http://LACNet.lacchain.net)

The flows of the membership contracting process managed by the L-NET Operational Team up until the start of the node permissioning process are described below.
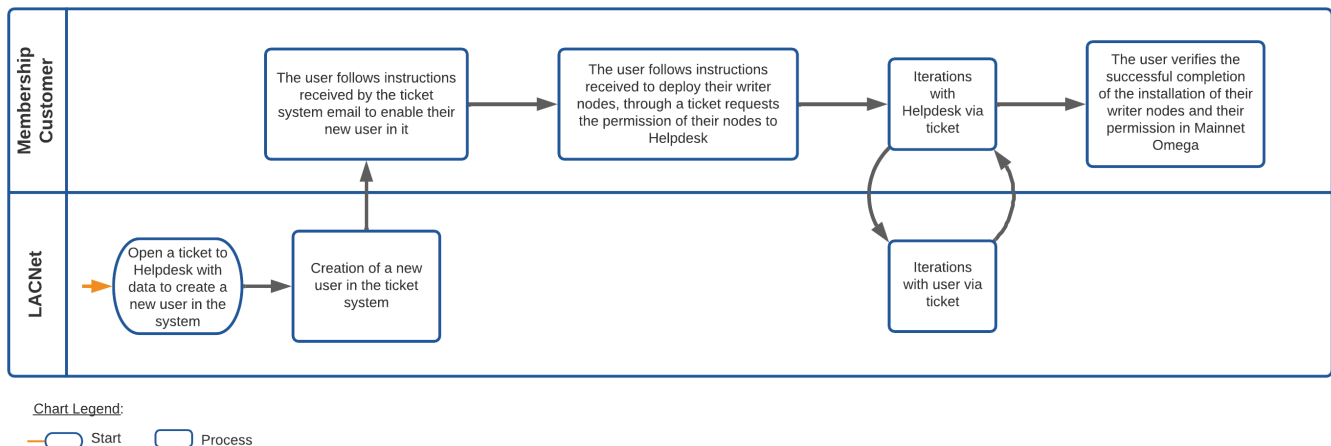
Acquisition flow of a membership:
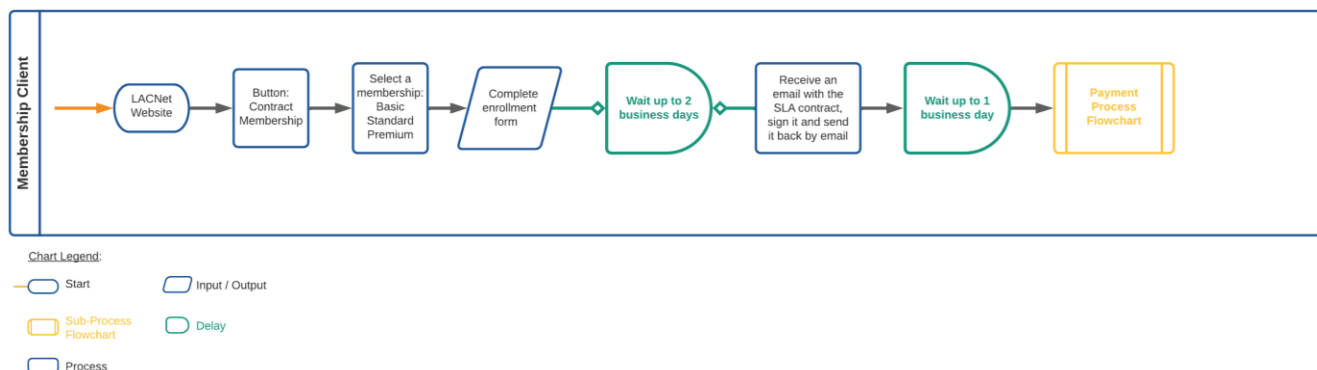

Payment flow of a membership:

Chart Legend:
— Start | Process
Flujo de Subproceso | Delay
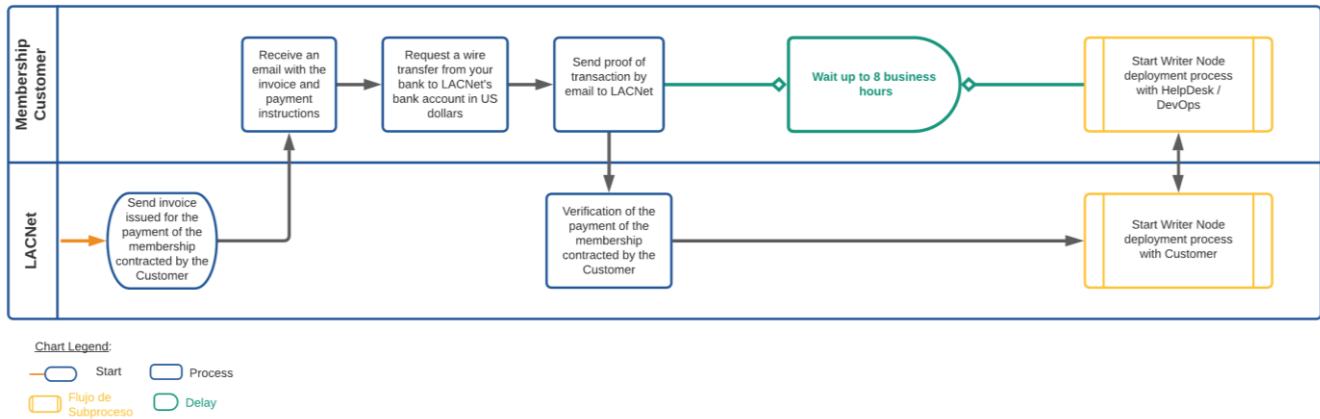
Permissioning flow of a membership:

Chart Legend:
— Start | Process

The flow of the HelpDesk Support with the response times according to the type of membership contracted is described below:

Basic or Standard Membership: First response guaranteed within three working days by a technical analyst from the LACNet operational team since the support request ticket is generated by the Applicant.
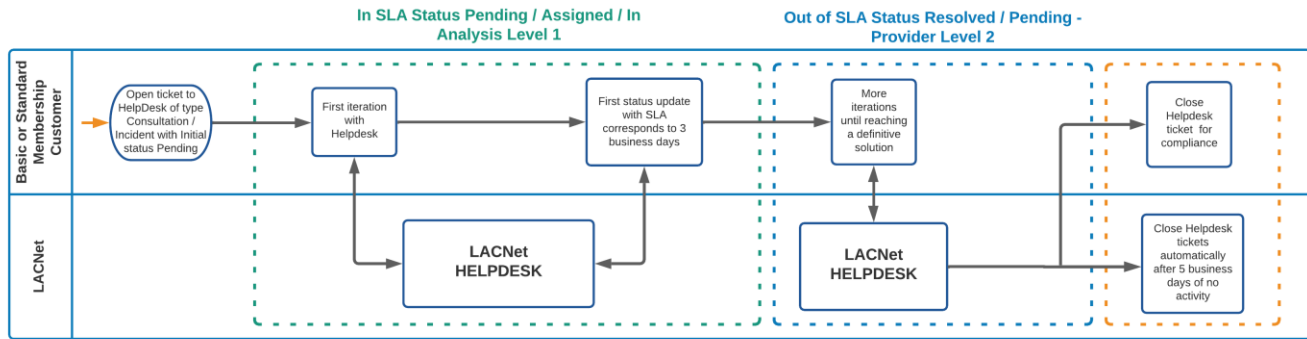
Premium Membership: First response guaranteed within a business day by a technical analyst of the LACNet operational team since the support request ticket is generated by the Applicant. Additionally, a direct contact telephone number will be provided if the incident is urgent and requires immediate attention that will be operational from 10 am to 10 pm Uruguay time.
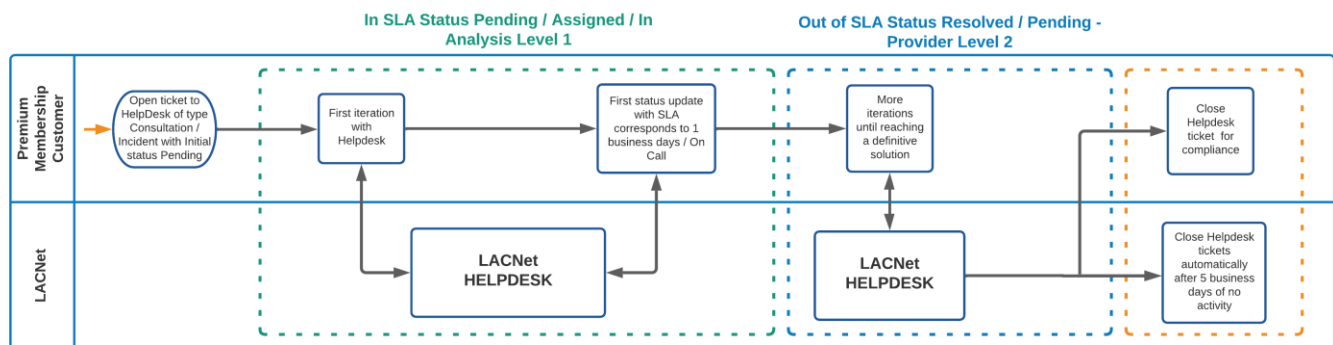
The attention schedule of the incident ticket system will be with an 8x5 regime, from Monday to Friday from 10 am to 7 pm URUGUAY HOUR UYT.

ATTACHMENT C
L-NET Trademarks

ATTACHMENT D
Special Agreements with the Applicant