

# MiCA White Paper

## Access Protocol (ACS)

Version 1.0  
August 2025

White Paper in accordance with Markets in Crypto Assets Regulation (MiCAR)  
for the European Economic Area (EEA).

Purpose: seeking admission to trading in EEA.

Prepared and Filed by LCX.com

NOTE: THIS CRYPTO-ASSET WHITE PAPER HAS NOT BEEN APPROVED BY ANY COMPETENT AUTHORITY IN ANY MEMBER STATE OF THE EUROPEAN ECONOMIC AREA. THE PERSON SEEKING ADMISSION TO TRADING IS SOLELY RESPONSIBLE FOR THE CONTENT OF THIS CRYPTO-ASSET WHITE PAPER ACCORDING TO THE EUROPEAN ECONOMIC AREA'S MARKETS IN CRYPTO-ASSET REGULATION (MICA).

LCX is voluntarily filing a MiCA-compliant whitepaper for Access Protocol (ACS), even though ACS is classified as "Other Crypto-Assets" under the Markets in Crypto-Assets Regulation (MiCA). Unlike Asset-Referenced Tokens (ARTs), Electronic Money Tokens (EMTs), or Utility Tokens, Although ACS provides access and governance functionalities, it does not qualify as a 'Utility Token' under MiCA Annex I. Accordingly, ACS is classified as an **Other Crypto-Asset**.

However, MiCA allows service providers to publish a whitepaper voluntarily to enhance transparency, regulatory clarity, and investor confidence. ACS functions as the token of the Access Protocol – a decentralized cross-chain bridging platform that enables fast, secure interoperability between blockchains.

This document provides essential information about ACS's characteristics, risks, and the framework under which LCX facilitates ACS-related services in compliance with MiCA's regulatory standards.

This white paper has been prepared in accordance with the requirements set forth in Commission Implementing Regulation (EU) 2024/2984, ensuring that all relevant reporting formats, content specifications, and machine-readable structures outlined in Annex I of this regulation have been fully mapped and implemented, particularly reflected through the Recitals, to enable proper notification under the Markets in Crypto-Assets Regulation (MiCAR).

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**01      DATE OF NOTIFICATION**

2025-09-01

**COMPLIANCE STATEMENTS**

- 02      This crypto-asset white paper has not been approved by any competent authority in any Member State of the European Economic Area. The offeror of the crypto-asset is solely responsible for the content of this crypto-asset white paper.

Where relevant in accordance with Article 6(3), second subparagraph of Regulation (EU) 2023/1114, reference shall be made to 'person seeking admission to trading' or to 'operator of the trading platform' instead of 'offeror'.

- 03      This crypto-asset white paper complies with Title II of Regulation (EU) 2023/1114 and, to the best of the knowledge of the management body, the information presented in the crypto-asset white paper is fair, clear and not misleading and the crypto-asset white paper makes no omission likely to affect its import.
- 04      The crypto-asset referred to in this white paper may lose its value in part or in full, may not always be transferable and may not be liquid.
- 05      Not Applicable
- 06      The crypto-asset referred to in this white paper is not covered by the investor compensation schemes under Directive 97/9/EC of the European Parliament and of the Council. The crypto-asset referred to in this white paper is not covered by the deposit guarantee schemes under Directive 2014/49/EU of the European Parliament and of the Council.

## SUMMARY

### 07 Warning

This summary should be read as an introduction to the crypto-asset white paper. The prospective holder should base any decision to purchase this crypto-asset on the content of the crypto-asset white paper as a whole and not on the summary alone. The offer to the public of this crypto-asset does not constitute an offer or solicitation to purchase financial instruments and any such offer or solicitation can be made only by means of a prospectus or other offer documents pursuant to the applicable national law.

This crypto-asset white paper does not constitute a prospectus as referred to in Regulation (EU) 2017/1129 of the European Parliament and of the Council (36) or any other offer document pursuant to Union or national law.

### 08 Characteristics of the crypto-asset

Access Protocol's native crypto-asset, ACS, is a token that powers the Across cross-chain bridge ecosystem. ACS is primarily used to govern the protocol (holders can vote on proposals and treasury management) and to incentivize participants in the network [OBJ]. Liquidity providers and relayers earn ACS rewards for facilitating cross-chain transfers, aligning network security and performance with token distribution [OBJ]. Holding ACS may enable participation in certain on-chain activities (such as voting on upgrades or parameter changes via the Across DAO), but it confers no ownership rights in a legal entity, nor any entitlement to profits, dividends, or guaranteed returns. ACS does not represent equity or debt in any company; its value is derived solely from its technical and governance functions within the Access Protocol and the demand for its use in that ecosystem. Under the MiCA framework, utility tokens are intended solely to provide access to a good or service within the issuer's ecosystem and offer no additional rights or financial utilities. The ACS token, however, supports protocol governance, liquidity incentives, and fee-related functionalities—extending beyond mere access provision. As such, it does not meet the criteria of a utility token and is accordingly classified as an "Other Crypto-Asset" under MiCA guidelines (Title II).

### 09 Not applicable

### 10 Key information about the offer to the public or admission to trading

There is no new public offering of ACS tokens – the token is already created and distributed. Instead, this document is prepared in the context of admission to trading of ACS on a regulated crypto-asset trading platform (LCX). LCX AG, as a Liechtenstein-based regulated exchange operator, is facilitating the listing and trading of ACS in compliance with MiCA. LCX is not the issuer of ACS and does not control its supply; LCX's role is limited to providing a trading venue and custody services for the token in a compliant manner. This white paper is being published voluntarily to provide transparency and standardized information to investors regarding ACS's characteristics, given its listing on the LCX exchange. Since ACS is already in circulation and traded (including on decentralized exchanges following its creation), this admission does not involve any new token sale or fundraising. The trading of ACS on LCX will occur under market conditions – prices determined by supply and demand in the market. LCX supports trading pairs for ACS (e.g., ACS/EUR ) to provide liquidity for participants. By issuing this MiCA-compliant white paper and notifying the Liechtenstein Financial Market Authority (FMA), LCX ensures that trading of ACS on its platform adheres to the new regulatory standards for investor protection and disclosure.

|                                                           |                                                  |
|-----------------------------------------------------------|--------------------------------------------------|
| <i>Total offer amount</i>                                 | Not applicable                                   |
| <i>Total number of tokens to be offered to the public</i> | Not applicable                                   |
| <i>Subscription period</i>                                | Not applicable                                   |
| <i>Minimum and maximum subscription amount</i>            | Not applicable                                   |
| <i>Issue price</i>                                        | Not applicable                                   |
| <i>Subscription fees (if any)</i>                         | Not applicable                                   |
| <i>Target holders of tokens</i>                           | Not applicable                                   |
| <i>Description of offer phases</i>                        | Not applicable                                   |
| <i>CASP responsible for placing the token (if any)</i>    | Not applicable                                   |
| <i>Form of placement</i>                                  | Not applicable                                   |
| <i>Admission to trading</i>                               | LCX AG, Herrengasse 6, 9490 Vaduz, Liechtenstein |



**A. PART A - INFORMATION ABOUT THE OFFEROR OR THE PERSON SEEKING ADMISSION TO TRADING**

**A.1 Name**

LCX

**A.2 Legal Form**

AG

**A.3 Registered Address**

Herrengasse 6, 9490 Vaduz, Liechtenstein

**A.4 Head Office**

Herrengasse 6, 9490 Vaduz, Liechtenstein

**A.5 Registration Date**

24.04.2018

**A.6 Legal Entity Identifier**

529900SN07Z6RTX8R418

**A.7 Another Identifier Required Pursuant to Applicable National Law**

FL-0002.580.678-2

**A.8 Contact Telephone Number**

+423 235 40 15

**A.9 E-mail Address**

legal@lcx.com

**A.10 Response Time (Days)**

020

**A.11 Parent Company**

Not applicable

**A.12 Members of the Management Body**

| Full Name           | Business Address                         | Function               |
|---------------------|------------------------------------------|------------------------|
| Monty C. M. Metzger | Herrengasse 6, 9490 Vaduz, Liechtenstein | President of the Board |
| Katarina Metzger    | Herrengasse 6, 9490 Vaduz, Liechtenstein | Board Member           |
| Anurag Verma        | Herrengasse 6, 9490 Vaduz, Liechtenstein | Director of Technology |

**A.13 Business Activity**

LCX provides various crypto-asset services under Liechtenstein's Token and Trusted Technology Service Provider Act ("Token- und Vertrauenswürdiges Technologie-Dienstleister-Gesetz" in short "TVTG") also known as the Blockchain Act. These include custody and administration of crypto-assets, offering secure storage for clients' assets and private keys. LCX operates a trading platform, facilitating the matching of buy and sell orders for crypto-assets. It enables both crypto-to-fiat and crypto-to-crypto exchanges, ensuring compliance with AML and KYC regulations. LCX also supports token placements, marketing crypto-assets on behalf of offerors.

Under MiCA, LCX is classified as a Crypto-Asset Service Provider (CASP). LCX is not yet formally supervised under MiCA until the license is granted by the competent authority. LCX AG has applied for MiCA licensing on February 1, 2025, the first day of MiCA's implementation in Liechtenstein.

Under the TVTG framework, LCX provides:

- TT Depositary – Custody and safekeeping of crypto-assets.
- TT Trading Platform Operator – Operation of a regulated crypto-asset exchange.
- TT Exchange Service Provider – Crypto-to-fiat and crypto-to-crypto exchange.
- Token Issuer – Marketing and distribution of tokens.
- TT Transfer Service Provider – Crypto-asset transfers between ledger addresses.
- Token Generator & Tokenization Service Provider – Creation and issuance of tokens.
- Physical Validator – Enforcement of token-based rights on TT systems.
- TT Verification & Identity Service Provider – Legal capacity verification and identity registration.
- TT Price Service Provider – Providing aggregated crypto-asset price information.

**A.14 Parent Company Business Activity**

Not applicable

**A.15 Newly Established**

false

**A.16 Financial Condition for the past three Years**

LCX AG has a strong capital base, with CHF 1 million (approx. 1,126,000 USD) in share capital (Stammkapital) and a solid equity position (ACSKapital) in 2023. The company has experienced fluctuations in financial performance over the past three years, reflecting the dynamic nature of the crypto market. While LCX AG recorded a loss in 2022, primarily due to a market downturn and a security breach, it successfully covered the impact through reserves. The company has remained financially stable, achieving revenues and profits in 2021, 2023 and 2024 while maintaining break-even operations.

In 2023 and 2024, LCX AG strengthened its operational efficiency, expanded its business activities, and upheld a stable financial position. Looking ahead to 2025, the company anticipates positive financial development, supported by market uptrends, an inflow of customer funds, and strong business performance. Increased adoption of digital assets and service expansion are expected to drive higher revenues and profitability, further reinforcing LCX AG's financial position.

**A.17 Financial Condition Since Registration**

LCX AG has been financially stable since its registration, supported by CHF 1 million in share capital (Stammkapital) and continuous business growth. Since its inception, the company has expanded its operations, secured multiple regulatory registrations, and established itself as a key player in the crypto and blockchain industry.

While market conditions have fluctuated, LCX AG has maintained strong revenues and break-even operations. The company has consistently reinvested in its platform, technology, and regulatory compliance, ensuring long-term sustainability. The LCX Token has been a fundamental part of the ecosystem, with a market capitalization of approximately \$200 million USD and an all-time high exceeding \$500 million USD in 2022. Looking ahead, LCX AG anticipates continued financial growth, driven by market uptrends, increased adoption of digital assets, and expanding business activities.

**B. PART B - INFORMATION ABOUT THE ISSUER, IF DIFFERENT FROM THE OFFEROR OR PERSON SEEKING ADMISSION TO TRADING**

**B.1 Issuer different from offeror or person seeking admission to trading**

True

**B.2 Name**

Access Labs Inc

**B.3 Legal Form**

Corporation (Inc.), incorporated in the United States (Delaware U.S. corporation).

**B.4 Registered Address**

Sacramento, California, USA

**B.5 Head Office**

Sacramento, California, USA

**B.6 Registration Date**

2022

**B.7 Legal Entity Identifier**

Not applicable

**B.8 Another Identifier Required Pursuant to Applicable National Law**

Not applicable

**B.9 Parent Company**

Not applicable

**B.10 Members of the Management Body**

Mika Honkasalo (Founder of Access Protocol) 

Andreas Nicolos (Head of Ecosystem Growth)

Ladi & Sal (Co-Founders/Engineers)

**B.11 Business Activity**

Development and operation of the Access Protocol platform, a Web3 content monetization network. The issuer's activities include maintaining the ACS smart contracts, onboarding content creators, developing platform tools (e.g. Access Content Hub and Access Scribe publishing platform), and community growth initiatives.

**B.12 Parent Company Business Activity**

Not applicable

**C. PART C - INFORMATION ABOUT THE OPERATOR OF THE TRADING PLATFORM IN CASES WHERE IT DRAWS UP THE CRYPTO-ASSET WHITE PAPER AND INFORMATION ABOUT OTHER PERSONS DRAWING THE CRYPTO-ASSET WHITE PAPER PURSUANT TO ARTICLE 6(1), SECOND SUBPARAGRAPH, OF REGULATION (EU) 2023/1114**

**C.1 Name**

LCX AG

**C.2 Legal Form**

AG

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Herrengasse 6, 9490 Vaduz, Liechtenstein

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**C.6 Legal Entity Identifier**

529900SN07Z6RTX8R418

**C.7 Another Identifier Required Pursuant to Applicable National Law**

FL-0002.580.678-2

**C.8 Parent Company**

Not Applicable

**C.9 Reason for Crypto-Asset White Paper Preparation**

LCX is voluntarily preparing this MiCA-compliant whitepaper for ACS (ACS) to enhance transparency, regulatory clarity, and investor confidence. While ACS does not require a MiCA whitepaper due to its classification as "Other Crypto-Assets", LCX is providing this document to support its role as a Crypto-Asset Service Provider (CASP) and ensure compliance with MiCA regulations in facilitating ACS trading on its platform.

**C.10 Members of the Management Body**

| Full Name           | Business Address                         | Function               |
|---------------------|------------------------------------------|------------------------|
| Monty C. M. Metzger | Herrengasse 6, 9490 Vaduz, Liechtenstein | President of the Board |
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**C.11 Operator Business Activity**

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ensuring compliance with AML and KYC regulations. LCX also supports token placements, marketing crypto-assets on behalf of offerors.

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- Token Issuer – Marketing and distribution of tokens.
- TT Transfer Service Provider – Crypto-asset transfers between ledger addresses.
- Token Generator & Tokenization Service Provider – Creation and issuance of tokens.
- Physical Validator – Enforcement of token-based rights on TT systems.
- TT Verification & Identity Service Provider – Legal capacity verification and identity registration.
- TT Price Service Provider – Providing aggregated crypto-asset price information.

**C.12 Parent Company Business Activity**

Not Applicable

**C.13 Other persons drawing up the white paper under Article 6 (1) second subparagraph MiCA**

Not Applicable

**C.14 Reason for drawing up the white paper under Article 6 (1) second subparagraph MiCA**

Not Applicable

## **D. PART D - INFORMATION ABOUT THE CRYPTO-ASSET PROJECT**

### **D.1 Crypto-Asset Project Name**

Access Protocol

### **D.2 Crypto-Assets Name**

Access Protocol Token

### **D.3 Abbreviation**

ACS

### **D.4 Crypto-Asset Project Description**

Access Protocol is a Web3 content monetization platform that enables digital publishers and creators to monetize content through a staking model rather than traditional paywalls [OBJ]. The project introduces a new layer where users stake ACS tokens to gain access to premium content (articles, reports, media) across participating websites, instead of paying fiat subscriptions [OBJ] [OBJ]. Creators in turn receive a share of these staked tokens as recurring revenue. This model aligns incentives between creators and consumers: consumers retain ownership of their staked tokens (which they can unstake anytime), while creators get continuous support as long as content remains valuable. Access Protocol's ecosystem includes a Content Hub (a portal listing all creators using the protocol) and integration tools for creators to implement token-gated content on their own sites. By leveraging blockchain, Access Protocol aims to eliminate reliance on ads and low-conversion paywalls, fostering a more direct and efficient creator–consumer relationship.

### **D.5 Details of all persons involved in the implementation of the crypto-asset project**

The ACS project is a collaborative effort involving the core developers, the issuing foundation, and a decentralized community of node operators and users. Key parties include:

| Full Name                 | Business Address | Function                      |
|---------------------------|------------------|-------------------------------|
| Mika Honkasalo            | USA              | CEO                           |
| Andreas Nicolos           | USA              | Head of Growth                |
| Ladi & Sal                | USA              | Lead Developers               |
| Access Protocol Community | Global           | Decentralized governance body |

### **D.6 Utility Token Classification**

false

**D.7 Key Features of Goods/Services for Utility Token Projects**

Not applicable

**D.8 Plans for the Token**

Not applicable

**D.9 Resource Allocation**

Not applicable

**D.10 Planned Use of Collected Funds or Crypto-Assets**

Not applicable

## **E. PART E - INFORMATION ABOUT THE OFFER TO THE PUBLIC OF CRYPTO-ASSETS OR THEIR ADMISSION TO TRADING**

### **E.1 Public Offering or Admission to Trading**

ATTR

### **E.2 Reasons for Public Offer or Admission to Trading**

LCX is voluntarily filing a MiCA-compliant whitepaper for Access Protocol Token (ACS) to enhance transparency, regulatory clarity, and investor confidence. While ACS is classified as “Other Crypto-Assets” under MiCA and does not require a whitepaper, this initiative supports compliance readiness and aligns with MiCA’s high disclosure standards. By doing so, LCX strengthens its position as a regulated exchange, ensuring a trustworthy and transparent trading environment for ACS within the EU’s evolving regulatory framework. Additionally, this filing facilitates market access and institutional adoption by removing uncertainty for institutional investors and regulated entities seeking to engage with ACS in a compliant manner. It further supports the broader market adoption and integration of ACS into the regulated financial ecosystem, reinforcing LCX’s role in shaping compliant and transparent crypto markets.

### **E.3 Fundraising Target**

Not applicable

### **E.4 Minimum Subscription Goals**

Not applicable

### **E.5 Maximum Subscription Goal**

Not applicable

### **E.6 Oversubscription Acceptance**

Not applicable

### **E.7 Oversubscription Allocation**

Not applicable

### **E.8 Issue Price**

Not applicable

### **E.9 Official Currency or Any Other Crypto-Assets Determining the Issue Price**

Not applicable

### **E.10 Subscription Fee**

Not applicable

### **E.11 Offer Price Determination Method**

Not applicable

### **E.12 Total Number of Offered/Traded Crypto-Assets**

Approximately 42 billion ACS tokens are currently in circulation and tradeable on the market ~~(see F.5)~~. (This is the circulating supply as of mid-2025; it represents the portion of the total token supply that is not locked or vesting. The maximum total supply is 100 billion ACS, out of which ~42B are circulating and the remainder will release over time via inflation.) All circulating tokens are fungible and identical. When admitted to trading on LCX (or other EU platforms), effectively the same circulating tokens become available for trading to European users – there is no new issuance. The number of ACS admitted to trading can grow over time as new tokens enter circulation through the protocol’s inflation (approximately 5% annual inflation, see F.5 and H.5).



- E.13 Targeted Holders**  
ALL
- E.14 Holder Restrictions**  
Not applicable
- E.15 Reimbursement Notice**  
Not applicable
- E.16 Refund Mechanism**  
Not applicable
- E.17 Refund Timeline**  
Not applicable
- E.18 Offer Phases**  
Not applicable
- E.19 Early Purchase Discount**  
Not applicable
- E.20 Time-Limited Offer**  
Not applicable
- E.21 Subscription Period Beginning**  
Not applicable
- E.22 Subscription Period End**  
Not applicable
- E.23 Safeguarding Arrangements for Offered Funds/Crypto-Assets**  
Not applicable
- E.24 Payment Methods for Crypto-Asset Purchase**  
ACS/EUR
- E.25 Value Transfer Methods for Reimbursement**  
Not applicable
- E.26 Right of Withdrawal**  
Not applicable
- E.27 Transfer of Purchased Crypto-Assets**  
Not applicable
- E.28 Transfer Time Schedule**  
Not applicable
- E.29 Purchaser's Technical Requirements**  
Not applicable
- E.30 Crypto-asset service provider (CASP) name**  
Not applicable

**E.31 CASP identifier**

Not applicable

**E.32 Placement Form**

NTAV

**E.33 Trading Platforms name**

LCX AG

**E.34 Trading Platforms Market Identifier Code (MIC)**

LCXE

**E.35 Trading Platforms Access**

ACS is widely traded on numerous cryptocurrency exchanges globally. ACS is not confined to any single trading venue; it can be accessed by retail and institutional investors worldwide through dozens of exchanges. LCX Exchange now supports ACS trading (pair ACS/EUR). To access ACS trading on LCX, users must have an LCX account and complete the platform's KYC verification, as LCX operates under strict compliance standards. Trading on LCX is available via its web interface and APIs to verified customers.

**E.36 Involved Costs**

Not applicable

**E.37 Offer Expenses**

Not applicable

**E.38 Conflicts of Interest**

Not applicable

**E.39 Applicable Law**

For admission to trading of ACS on LCX Exchange, the applicable law is **Liechtenstein law**, applied in accordance with MiCA and relevant EU regulations. For decentralized use of ACS outside LCX, applicable law depends on the user's jurisdiction.

**E.40 Competent Court**

In case of disputes related to services provided by LCX, the competent court is: The Courts of Liechtenstein, with jurisdiction in accordance with Liechtenstein law and applicable EU regulations

## **F. PART F - INFORMATION ABOUT THE CRYPTO-ASSETS**

### **F.1 Crypto-Asset Type**

Other Crypto-Asset

### **F.2 Crypto-Asset Functionality**

The ACS primary function is that ACS can be freely traded or exchanged, and used in DeFi (for example, liquidity pools, or potentially to purchase NFTs or other perks offered by creators). Technically, ACS implements standard token operations (transfer, balance tracking) as an SPL token on Solana, and the Access Protocol program adds staking/unstaking and reward calculation functions. The token does not confer any automatic profit rights, but its functionality incentivizes holding (to gain access and rewards). It can also function as a governance token in voting smart contracts once those are live.

### **F.3 Planned Application of Functionalities**

All the above functionalities are actively used.

### **F.4 Type of white paper**

OTHR

### **F.5 The type of submission**

NEWT

### **F.6 Crypto-Asset Characteristics**

ACS is a fungible, divisible digital token on the Solana blockchain (token mint address: 5MAYDf...AhDS5y <sup>[OBJ]</sup>). It has up to 9 decimal places (divisible to a one-billionth of an ACS) – enabling microtransactions if needed. The token does not represent any underlying asset or claim; holding ACS only grants the utilities mentioned, not any entitlement to profits or reimbursement. ACS has a fixed initial supply of 100,000,000,000 tokens (100 billion) minted at genesis, with a monetary inflation schedule of 5% per year (meaning supply can increase beyond 100B over time) <sup>[OBJ]</sup>. The tokens are fully fungible (each ACS is interchangeable). ACS exists primarily on Solana; a wrapped version on Starknet may exist as the protocol expands there (governed by bridging contracts), but the authoritative ledger for ACS supply is Solana's program. The ACS token program ensures that new issuance via inflation is controlled by the protocol's logic (no arbitrary minting). There are no burning mechanisms except the 2% quarterly burn of staking fees, which slightly deflates supply in parallel with inflation <sup>[OBJ]</sup>. In terms of technical standard: ACS conforms to Solana's SPL Token standard (similar to ERC-20 functionality) – it can be held in any Solana SPL-compatible wallet and integrated with Solana smart contracts easily. The token's behavior (transfer, freeze, mint) is currently governed by the Access Protocol's CentralState program which holds mint authority <sup>[OBJ]</sup>. However, effectively ACS behaves as a normal token for users. The token has no expiration, no embedded conditions (like it's not a voucher that expires; it remains valid indefinitely).

### **F.7 Commercial name or trading name**

ACS

### **F.8 Website of the issuer**

[accessprotocol.co](https://accessprotocol.co)

### **F.9 Starting date of offer to the public or admission to trading**

2025-10-01

- F.10 Publication date**  
2025-10-01
- F.11 Any other services provided by the issuer**  
Not applicable
- F.12 Language or languages of the white paper**  
English
- F.13 Digital Token Identifier Code used to uniquely identify the crypto-asset or each of the several crypto assets to which the white paper relates, where available**  
Not available (none currently assigned)
- F.14 Functionally Fungible Group Digital Token Identifier, where available**  
Not available (none currently assigned)
- F.15 Voluntary data flag**  
true
- F.16 Personal data flag**  
false
- F.17 LEI eligibility**  
Not available
- F.18 Home Member State**  
Liechtenstein
- F.19 Host Member States**  
Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.

## **G. PART G - INFORMATION ON THE RIGHTS AND OBLIGATIONS ATTACHED TO THE CRYPTO-ASSETS**

### **G.1 Purchaser Rights and Obligations**

Holding ACS entitles the purchaser to the token within the Access Protocol ecosystem and to freely dispose of it (trade, transfer). The primary rights of an ACS holder are: (a) the right to access participating digital content by staking ACS (i.e., using the token as a “subscription key”) [OBJ]; (b) the right to receive a portion of staking reward distributions (new ACS inflation) if they stake their tokens in the protocol [OBJ]; (c) a potential right to participate in protocol governance (voting on proposals) once implemented [OBJ]; and (d) the right to any community benefits creators offer to token holders (for example, if a creator promises an NFT drop or exclusive chat access to ACS stakers, the holder has a right to those perks as per the creator’s terms) [OBJ]. Additionally, token holders have the general rights associated with a crypto token: they can hold it as an investment, sell it, use it in DeFi platforms, etc., at their own discretion.

However, it is important to note what rights ACS does NOT provide: It does not give any ownership in Access Labs Inc. or any voting rights in the company’s corporate decisions. It does not guarantee any profit, dividend, or fixed return. It does not entitle holders to claim any fiat or other assets from the issuer. All rights are limited to on-chain utility and community participation.

As for obligations, ACS holders do not have obligations merely by holding the token – one can simply hold it passively. If a holder wishes to exercise the token’s utility (e.g. to access content), they must follow the protocol’s rules: for instance, they need to stake the token into a creator’s pool (which is a blockchain transaction) and thereby agree to lock those tokens (they can withdraw any time, but while staked, the token is committed to that pool) [OBJ]. Users are responsible for maintaining their own wallet security – if they lose their private keys, they lose access to their ACS (the issuer has no obligation or ability to restore lost tokens). If participating in governance, holders are expected to abide by any governance process rules. Also, by using the Access platform, users agree to the Terms of Service of Access Protocol [OBJ] [OBJ], which includes obligations like not using the platform for illicit purposes, respecting content guidelines, etc. But these are standard platform obligations, not unique to token holders beyond platform use.

### **G.2 Exercise of Rights and Obligation**

To exercise the rights of ACS, a holder uses a compatible crypto wallet to interact with the Access Protocol smart contracts. For example, to access a certain publication, the user would go to that creator’s site or the Access Content Hub, connect their Solana wallet, and send a Stake transaction locking the required amount of ACS into the creator’s StakePool account [OBJ]. This transaction is recorded on-chain (with the user’s StakeAccount updated) and immediately grants access – the website verifies the stake via a signed message or on-chain call (Access provides APIs for this) [OBJ] [OBJ]. The user can then consume content. They must keep the tokens staked for ongoing access; if they unstake (which they can do at any time via an Unstake transaction), their access to that creator’s content will be revoked once the system registers that removal (generally instantly).

To claim staking rewards: rewards accrue continuously; a user can trigger a ClaimRewards transaction from their wallet daily or at chosen intervals to collect the ACS tokens they’ve earned [OBJ]. The protocol automatically calculates rewards based on their stake and time. If a user doesn’t claim daily, they can claim a lump sum later – but note, the smart contract is coded such that claiming daily could yield slightly more due to how it iterated an extra day (a bug that was fixed as per audit) [OBJ] [OBJ]. In practice, the claim function is straightforward to execute via the interface.

### **G.3 Conditions for Modifications of Rights and Obligations**

Any modification of ACS token holders' rights would generally be tied to a protocol upgrade or governance decision. They have committed that major changes will be put forth transparently and, once governance is live, token holder votes will be the path to modify protocol parameters [Obj]. For instance, if the inflation rate (5%) were to be changed, it would be done via a governance proposal where ACS holders vote on the new rate. Similarly, any introduction of new utility features (or removal of features) would be proposed and either executed through the upgrade authority or through on-chain governance.

As for obligations, the Terms of Service for using Access Protocol can technically be updated by the issuer, but those terms changes (like any web service) would be communicated on the website and possibly require user acceptance. Changes in obligations could be: if new KYC requirements were ever imposed for using the service due to regulations, etc. At present, none are, since it's a decentralized access model.

Investors and users will be notified of any material changes in rights or obligations via official channels: announcements on the Access Protocol website, Medium blog, and social media, and through partner creators if relevant. Given MiCA's requirements, any significant changes might also warrant an update or new white paper.

### **G.4 Future Public Offers**

Not applicable

### **G.5 Issuer Retained Crypto-Assets**

Not applicable

### **G.6 Utility Token Classification**

No

### **G.7 Key Features of Goods/Services of Utility Tokens**

Not applicable

### **G.8 Utility Tokens Redemption**

Not applicable

### **G.9 Non-Trading Request**

True

### **G.10 Crypto-Assets Purchase or Sale Modalities**

Not applicable

### **G.11 Crypto-Assets Transfer Restrictions**

Not applicable

### **G.12 Supply Adjustment Protocols**

The Access Protocol (ACS) token employs a structured inflation model combined with periodic burns to manage its circulating supply. An annual inflation rate of 5% introduces new tokens, while a 2% staking burn fee—collected and burned quarterly—provides a mechanism to mitigate inflation. The tokenomics include diverse allocations for development, incentives, team, and community pools, with no hard cap on total issuance. Supply dynamics are transparent and monitored through tools like Tokenomist, helping stakeholders anticipate emission schedules and dilution risks.

### G.13 Supply Adjustment Mechanisms

The Access Protocol (ACS) token features a dynamic supply model that balances inflationary issuance with deflationary burns. It implements a 5% annual inflation rate to introduce new tokens aimed at ecosystem growth, offset by a 2% staking fee burned quarterly, which helps moderate supply expansion. The token does not have a maximum cap, allowing continued issuance under its inflation policy. Supply transparency remains high, with the vesting schedule, unlock events, and emission data accessible through platforms like Tokenomist. Collectively, these mechanisms enable predictable supply dynamics while allowing stakeholders to anticipate dilution and token distribution over time.

### G.14 Token Value Protection Schemes

False

### G.15 Token Value Protection Schemes Description

Not Applicable

### G.16 Compensation Schemes

False

### G.17 Compensation Schemes Description

Not Applicable

### G.18 Applicable Law

For admission to trading of ACS on LCX Exchange, the applicable law is **Liechtenstein law**, applied in accordance with MiCA and relevant EU regulations. For decentralized use of ACS outside LCX, applicable law depends on the user's jurisdiction.

### G.19 Competent Court

In case of disputes related to services provided by LCX, the competent court is: The Courts of Liechtenstein, with jurisdiction in accordance with Liechtenstein law and applicable EU regulations.

## H. PART H – INFORMATION ON THE UNDERLYING TECHNOLOGY

### H.1 Distributed ledger technology

The ACS token and Access Protocol run primarily on the Solana blockchain, which is a high-performance, decentralized distributed ledger<sup>[OBJ]</sup>. Solana uses a unique combination of Proof-of-Stake (PoS) and Proof-of-History (PoH) to achieve fast transaction finality (often 1–2 seconds or less) and high throughput (up to tens of thousands of transactions per second)<sup>[OBJ]</sup>. The choice of Solana was made for its low transaction costs and scalability – critical for microtransactions and frequent user interactions (like daily reward claims and content access checks). On Solana, ACS exists as an SPL token (Solana's equivalent to ERC-20), and the Access Protocol logic is implemented in a Solana Program (smart contract) deployed on-chain<sup>[OBJ]</sup><sup>[OBJ]</sup>. This program handles staking pools, reward distribution, etc., leveraging Solana's ledger to record all state changes (stake balances, reward accruals). In addition to Solana, Access Protocol has integrated with Starknet, a Layer-2 scaling network on Ethereum that uses ZK-Rollup technology<sup>[OBJ]</sup>. Starknet is effectively another DLT environment where Access Protocol has deployed a version of its contracts in Cairo (programming language). Starknet allows for potentially automating content distribution with smart contracts and leveraging Ethereum's security via validity proofs<sup>[OBJ]</sup>. However, ACS token on Starknet is likely represented as a bridged asset since the main issuance is on Solana. The interplay is such that Solana is the primary ledger for token accounting, while Starknet smart contracts might

facilitate certain features (like a possible reputation or payment system for content AI agents) with cross-chain interoperability.

Both Solana and Starknet ensure decentralization: Solana is maintained by a global network of independent validators (over 2,000 nodes historically, though with a smaller consensus group for efficiency), and Starknet inherits Ethereum's decentralization (with proofs posted on Ethereum mainnet).

**ACS Whitepaper:** [https://www.accessprotocol.co/resources/Whitepaper\\_Access.pdf](https://www.accessprotocol.co/resources/Whitepaper_Access.pdf)

**Public block explorer:** <https://solscan.io/>

**ACS Main repository:** <https://github.com/Access-Labs-Inc/access-protocol>

**ACS Developer portal:** <https://www.accessprotocol.co/en/creators>

## H.2 Protocols and Technical Standards

The project adheres to multiple blockchain standards:

On Solana, ACS conforms to the SPL Token Standard (specifically, it utilizes the standard token program which defines how tokens are issued, transferred, burned, etc.). The token's mint address (5MAYDf...AhDS5y) can be viewed on Solana explorers [108]. The Solana program that implements Access Protocol logic is written in Rust and follows Solana's program architecture guidelines for on-chain programs. It uses accounts for storing state like the CentralState (global info), StakePool (per creator), and StakeAccount (per user) [109]. The program interacts with the SPL token program to transfer ACS as needed for rewards and enforce staking. Technical standards like program-derived addresses and Solana's CPI (Cross-Program Invocation) are likely used to integrate with the SPL token program.

- **Consensus Mechanism:** Solana's consensus is a form of Delegated Proof of Stake combined with a Tower BFT algorithm, enabled by the Proof of History clock. Validators stake SOL (the native coin) to participate in consensus; ACS as a token doesn't affect Solana consensus, but it benefits from it. PoH provides a cryptographic timestamping that orders transactions, while PoS validators reach agreement on blocks quickly [108] [109]. This yields 3-5 second confirmations without mining [108] [109]. The result: ACS transactions (like transfers or stake instructions) settle fast, with finality typically within a few seconds.
- **Network and Communication Protocols:** Users interact with the Access Protocol via standard web3 calls. For example, the Access front-end might use JSON-RPC calls to Solana nodes (standard Solana JSON-RPC API) to query account states (like checking if a wallet has staked the required ACS). For Starknet, the Cairo contracts follow Starknet's protocol (which itself posts proofs to Ethereum using the STARK verification standard).
- **Technical Standards (Off-chain integration):** Access has provided example backend implementations in multiple languages as mentioned [108]. These follow standard REST API patterns where a user's wallet signature is used to authenticate content access. This implies usage of standard cryptographic signature schemes (Ed25519 for Solana) and JWT (JSON Web Tokens) possibly for session management in the example code, which are standard web protocols.
- **Interoperability:** The Access Protocol's design on Solana can interoperate with other Solana programs (e.g., a DeFi protocol could incorporate ACS by reading stake



accounts or by ACS being in liquidity pools). ACS's integration with Starknet suggests use of bridging protocols. Possibly the project used Wormhole or a custom bridge to represent ACS on Starknet. The audit by "Nethermind" (Halborn) would have covered aspects of bridging as well, to ensure consistency of token supply across chains.

In summary, ACS's technical implementation respects widely-used standards: the SPL token program for token logic, Solana's runtime for program logic, and the upcoming use of Ethereum/Starknet standards for L2. By building on these standard protocols, ACS ensures compatibility with wallets (Phantom etc. support SPL tokens natively), exchanges (which can integrate SPL deposits/withdrawals), and other ecosystem tools.

### H.3 Technology Used

The Access Protocol technology stack consists of:

**Smart Contracts:** On Solana, the core program (smart contract) is written in Rust (Solana's preferred on-chain language) and compiles to Berkeley Packet Filter (BPF) bytecode for deployment. The program manages all ACS staking, reward, and pool logic. On Starknet, contracts are written in Cairo (the native language for Starknet) to implement similar functionality in that environment [00]. Both were audited (Halborn for Rust, Nethermind/Halborn for Cairo). Key smart contract components include the CentralState account (which likely holds configuration like total reward rate, last update timestamp, etc.), the StakePool accounts (one per content creator, storing total staked tokens, reward distribution state), and StakeAccount for each user per pool (tracking individual staked amount, last claimed time, etc.) [00]. There might also be a BondAccount per the GitHub (for the bond feature, which allowed selling locked tokens to supporters with vesting) [00], though that feature is perhaps auxiliary.

**Backend & Off-chain:** The project offers off-chain backend implementations in TypeScript/Node.js, Rust (server), Go, and Python to help creators verify wallet ownership and manage content gating [00]. These backends use standard libraries (e.g., Solana Web3.js in Node, or Anchor framework maybe). They handle tasks like verifying a user's signature that they own a certain wallet, checking on-chain via RPC if that wallet has a stake in the creator's pool, and then issuing a JWT to the front-end to allow content access for a session. This off-chain layer is optional; some creators might integrate directly in front-end or via cloud functions, but Access provided these templates to make integration easier.

**Front-end:** The user-facing parts (Access Content Hub and possibly a browser extension or embedded widget on creator sites) are built with common web technologies (likely React for the web app, given its popularity). They interact with wallets (Phantom, etc.) through wallet adapters (Solana's wallet adapter is a standard). The front-end calls the smart contracts (stake/unstake) through the user's wallet. It also communicates with the creator's backend to confirm access.

**Database/Storage:** For content itself, Access Protocol does not put content on-chain (that would be inefficient). Content remains hosted by the creators (or on a content delivery network). Access might use a simple database to index stake data for quicker checks, but since everything is on-chain, many implementations will just query the blockchain state. Some creators might use caches to avoid constant RPC calls. The real-time dashboard (like showing how much ACS is staked platform-wide) might use an indexer (maybe Access runs a GraphQL indexer or uses Solana's indexing services to track stats).

**Security and Authentication:** The system uses cryptographic signatures from user wallets to authenticate. For example, when logging into the Access Content Hub, a user might be prompted to sign a message with their wallet (this proves ownership without revealing private

keys) [OBJ]. The backend then verifies this signature using Solana's ed25519 verification. This approach means no traditional username/password – the wallet is the identity (Web3 login style).

**Bridging Technology:** The integration with Starknet implies a bridging solution. Possibly the project uses a trusted bridge where some of the ACS supply is locked in a Solana wallet and an equivalent amount minted on Starknet (and vice versa when bridging back). If they partnered with a known bridge (like Wormhole or Allbridge) it might have been mentioned, but since not explicitly, it could be a bespoke or planned integration. The Halborn audit for Cairo might have included reviewing a bridge contract that handles deposits and withdrawals to Solana.

**Scalability and throughput:** Solana's high TPS allows the Access program to scale to a large number of users. The program's operations (stake, claim) are likely  $O(1)$  or  $O(n)$  with small  $n$  (maybe iterating through some records). One audit issue was about reward calculation doing an extra iteration if claimed daily [OBJ] which was fixed for efficiency. This indicates the program has been optimized for performance.

**Upgradability:** The Solana program likely has an upgrade authority (currently held by Access Labs). That means the code can be updated (which they did, as there was a second Halborn audit for an update in 2023) [OBJ]. In future, they might transfer this authority to a governance contract so that only a successful token holder vote can change the code.

#### **H.4 Consensus Mechanism**

As noted, ACS runs on Solana's consensus. Here are specifics: Solana uses a delegated Proof-of-Stake (dPoS) consensus with a Practical Byzantine Fault Tolerance (PBFT) style finality gadget called Tower BFT. It's enhanced by Proof-of-History (PoH) as a kind of cryptographic timestamp that orders events. Validators take turns being the "leader" who produces a block, in a schedule determined by their stake weight and PoH's timing. The leader sequences transactions and publishes the block. Other validators verify it and vote on it. Tower BFT leverages the history as a clock and the votes to lock in blocks, achieving finality typically within 2 network confirmations (often under 2 seconds). This consensus does not involve mining – instead, it's staking of the native SOL token. Because ACS is on Solana, it inherits the security and finality guarantees from this consensus. Specifically, the network is secure as long as >66% of the stake (SOL) is honest. The Federated Consensus aspect from XRP's example isn't directly relevant; Solana's model is more Nakamoto-PoS hybrid.

**Starknet's consensus:** Starknet itself doesn't have a decentralized validator set yet like a L1; it currently relies on a sequencer operated by StarkWare (the core devs), and uses ZK-STARK proofs to roll up blocks to Ethereum. Eventually Starknet plans decentralization of sequencers. For now, consensus for transactions ordering on Starknet is centralized (with proofs ensuring state integrity). But because ACS's main token isn't fully on Starknet (just an integration), the consensus that matters is Ethereum's PoS (for finality of Starknet states via proofs) and Solana's PoS (for the token on L1).

In summary, ACS's operations depend on Solana's PoS consensus, which offers fast, low-cost transaction processing [OBJ] [OBJ]. There is no separate consensus for ACS; it doesn't run its own blockchain, it's an application on these existing chains. Therefore, ACS holders are subject to the consensus rules and potential risks of those networks (e.g., Solana validators could theoretically censor transactions, though unlikely given the network's structure and many validators).

#### **H.5 Incentive Mechanisms and Applicable Fees**

There are two layers of incentives:

At the blockchain level (Solana): Solana's validators are incentivized by SOL inflation and transaction fees, not by ACS. Every ACS transaction (stake, transfer, etc.) carries a tiny network fee (paid in SOL, typically around \$0.00001–\$0.001). These fees go to Solana validators as reward for processing transactions. ACS holders indirectly benefit from low fees (cheap to use the network) but they do pay that small cost per transaction. It's negligible for users, so from ACS user perspective, the Solana fee is almost zero friction. Starknet, when used, also has fees (paid in ETH or native Starknet token if introduced) for transactions, but if ACS usage on Starknet is minimal or offloaded to automation, it's not significant for end users right now.

At the protocol level (Access Protocol): The Access Protocol has its own incentive design. The 5% annual inflation is the reward incentive – new ACS tokens are minted continuously and split 50/50 between content creators and content stakers [OBI]. This encourages creators to join (as they get ACS rewards on top of staked tokens from fans) and encourages users to stake (as they earn yield in ACS) [OBI] [OBI]. The inflation is effectively dilutive, but those who participate are compensated by the newly minted tokens. Non-participants (holders who don't stake) will see their share of total supply diluted ~5% a year – this is a kind of incentive to encourage all holders to stake and engage (or accept dilution).

The 2% quarterly fee (roughly 8% annually) on the staked amount that is burned acts as a balancing mechanism [OBI]. It means that of the rewards that one might gain, a portion is offset by the fact that their principal slowly shrinks if left staked. This was designed to counter inflation and prevent infinite growth of supply. Essentially, active stakers earn gross 5% APR in new tokens, but pay ~2% every 3 months (~8% yearly) on their stake; however, since that 8% is burned from the total supply, it benefits everyone by reducing supply. The net effect for an individual staker depends on overall participation; those who stake continuously might roughly break even or see modest growth in holdings, but they crucially gain content access (the primary benefit).

From a user perspective: if you stake ACS, over a year you might gain ~5% in rewards, but lose ~8% to fee burn, netting -3% tokens. However, if many people don't stake (or stake less than you), your share of the network could still increase. The economics are such that the system incentivizes maximizing staking across the board (because if few people stake, those who do will get more rewards relative to the burn, etc.). Ultimately, this mechanism is to ensure long-term sustainability and to align with potential governance where the community can adjust these rates.

## **H.6 Use of Distributed Ledger Technology**

True

## **H.7 DLT Functionality Description**

We will describe how the Solana network, as used by ACS, functions under the hood to support the token:

**Node Structure:** Solana is a public blockchain with validator nodes that produce and confirm blocks. Any participant with sufficient SOL stake (either their own or delegated by others) can become a validator. As of writing, Solana has hundreds of active validators distributed globally, contributing to network security (there's some geographic clustering, but generally decentralized). These validators run the Solana validator client which implements the consensus and ledger.

**Transaction Processing:** Solana groups transactions into blocks (or more precisely "slots" every ~400 milliseconds). A Solana transaction can contain multiple instructions, including calls to different smart contracts. For ACS, a user staking tokens triggers a transaction with

two instructions: one to the SPL Token program (to transfer ACS from user to the pool's token account) and one to the Access Protocol program (to update the stake account state) – Solana's runtime handles this atomically. Solana's unique parallel processing (via the Sealevel runtime) allows non-conflicting transactions (e.g., stakes to different pools) to be processed in parallel, improving throughput [66]. The network requires a leader (block producer) to gather transactions, which in Solana's case, cycles very quickly and often the leader schedules are determined ahead by stake weight.

**Consensus Finality:** When a validator votes on a block and accumulates supermajority of votes, that block is finalized (cannot be reverted unless >1/3 validators are malicious). In practical terms, a transaction on Solana is typically considered final within ~1 or 2 seconds (some wallets may wait for a couple confirmations for safety). This is beneficial for ACS: when a user stakes, within a second or two the content gateway knows it's confirmed – a very smooth user experience.

**Reliability and Upgrades:** Solana has had instances of downtime historically (network pauses requiring restarts). While improvements have been made (like Q1 2023 to Q3 2024 saw upgrades in fee markets, etc.), it's a possible risk that the network could halt. During such an event, ACS transactions (like new stakes or withdrawals) would be temporarily impossible until the network resumes. However, content access for already-staked users wouldn't immediately vanish; it would persist as long as their on-chain status stays recorded. Just no new updates could be made. The project monitors Solana's status closely; any major network incidents would be communicated to users.

**Smart Contract Lifecycle:** The Access Protocol smart contract was deployed to Solana mainnet prior to launch (and updated in late 2023 per Halborn audit follow-up) [67]. It has an upgradeable loader which means an authority key can replace the code. That authority is presumably held by Access Labs multisig. They have promised to eventually renounce or transfer this to community governance, ensuring the program can't be arbitrarily changed without consensus.

**Inter-chain Operation:** The presence on Starknet means at some interval, state or value moves between Solana and Starknet. This could be event-driven (user triggers a bridge to move some ACS to Starknet for use, then back). The bridging uses a set of smart contracts on each side plus external relayers or validators to coordinate. For instance, on Solana there might be a bridge contract where if a user wants to use ACS on Starknet, they deposit ACS into the bridge's escrow, and a message goes to Starknet to mint that amount on Starknet. The details are not fully public in this document, but one can assume a standard lock-and-mint approach. The Starknet audit likely checked that the Cairo contracts properly validate such messages and don't allow double spending. On return, tokens burned on Starknet allow release on Solana.

**Scalability for Access:** Because Access's use-case might involve micro-level interactions (like, potentially, every time a user accesses content one could imagine a microtransaction; though currently it's stake once for ongoing access), the scalability of Solana is a boon. If, say, thousands of new users join and stake daily, Solana can handle it within blocks. If content creators set up dynamic models (like pay-per-article by sending 0.1 ACS each time), those are feasible on Solana's chain given low latency and cost, though the current recommended approach is stake/un-stake rather than frequent small transfers. The architecture can adapt to various content models.

In essence, the underlying Solana network functions as a fast global ledger that records who has staked what to whom (as well as handling ACS transfers). The design decisions (like heavy use of on-chain state vs off-chain tracking) lean on Solana's ability to manage state efficiently. The average user sees none of the complexity: they just sign a transaction and get

access. But under the hood, it's the robust Solana DLT doing the work to enforce the rules that only those with tokens staked get the service.

## H.8 Audit

True

## H.9 Audit Outcome

The outcome of the audits can be summarized as successful, with all critical issues absent and high/medium issues resolved. To detail:

Halborn Solana Audit (2022): Found 0 critical, 3 high, 2 medium, 4 low, 3 info issues [OBJ]. Result: All high issues were fixed, and remaining issues were either fixed or determined to be low-impact. After fixes, Halborn gave a green light. They explicitly state "Halborn identified some security risks that were mostly addressed by the Access Labs team" [OBJ]. This implies that by the time of mainnet launch, no significant known vulnerabilities remained. The post-audit status table showed all High issues marked "SOLVED" [OBJ] and the mediums either "Solved" or "Risk Accepted with justification" (the one risk-accepted might have been an admin authority thing that the team intentionally kept, deeming it necessary but not dangerous). The important conclusion is that no outstanding critical/high vulnerabilities were present.

Audit link:

[https://www.accessprotocol.co/resources/Access\\_Labs\\_Access\\_Protocol\\_Updates\\_Solana\\_Program\\_Security\\_Audit.pdf](https://www.accessprotocol.co/resources/Access_Labs_Access_Protocol_Updates_Solana_Program_Security_Audit.pdf)

Halborn/Nethermind Starknet Audit (2022): Found 0 critical, 0 high, 2 medium, 3 low, 6 informational [OBJ]. Result: The two medium issues were: (1) an over-privileged admin role – the team decided to accept this risk likely because it was by design that the admin (Access Labs) could manage certain parameters in early stage [OBJ]; and (2) a missing mechanism for contract version differentiation, which might have been solved or just noted. Many informational issues (like naming conventions, etc.) were solved as per the report excerpt [OBJ]. The summary is that the Cairo contracts were found secure, with no major flaws. For a newly built L2 contract, that's a strong outcome.

Audit link: <https://hub.accessprotocol.co/info/resources>

Halborn Solana Update Audit (2023): While specifics aren't listed here, one can infer it addressed any changes and similarly found no new issues of concern. LCX would not proceed with listing if audits weren't satisfactory. It's mentioned on Access's site likely to show an ongoing commitment to security.

Additionally, beyond formal audits, the protocol has been live since Feb 2023 with significant usage (over 220k users) and no security incidents reported. This real-world track record further validates the audit conclusions. Often vulnerabilities, if any, would surface under heavy use, but ACS's program has performed as intended, distributing rewards, etc., without exploits. The code being open-source also allows community devs to inspect; no external reports of bugs have emerged, indicating a clean bill of health.

[OBJ] [OBJ]

## I. PART I – INFORMATION ON RISKS

### I.1 Offer-Related Risks

Market & Trading Risks: The admission of ACS to trading (and its trading on various exchanges) exposes holders to typical cryptocurrency market volatility [OBJ]. The market price of

ACS can fluctuate rapidly and unpredictably. Factors such as overall crypto market sentiment, macroeconomic news, developments in competing cross-chain projects, or usage changes in Access Protocol can cause significant price swings. It's common for tokens similar to ACS to experience double-digit percentage moves within days or even hours. An ACS holder must be prepared for the possibility of large losses (or gains) in short time frames. Liquidity risk is also present: although ACS will be listed on multiple exchanges (including a regulated one via LCX), extreme market conditions or regulatory news could dry up liquidity, making it difficult to execute large buy/sell orders without moving the market price significantly [OOB]. In times of stress, the spread between buy and sell prices might widen and slippage (the price impact of trades) could increase for ACS.

**Regulatory Risk (Offer/Trading):** The regulatory environment for crypto-assets like ACS is evolving and can impact trading [OOB]. While MiCA provides a framework in the EU (under which this white paper is voluntarily filed), other jurisdictions might impose new restrictions. For example, if a country outside the EEA were to classify ACS as a security or ban crypto trading, exchanges in that region might delist ACS, affecting global market access and liquidity. Even within the EEA, changes in rules (or enforcement thereof) could affect ACS's trading; for instance, if future regulations imposed stricter requirements on DeFi governance tokens, some platforms might limit trading to certain investor categories. Regulatory uncertainty or adverse rulings (like a court decision impacting similar tokens) could also cause rapid price declines as investors reassess legal risk.

**Custodial Risk:** Relatedly, holders who keep ACS on an exchange or with a third-party custodian rely on that entity's security practices and solvency [OOB]. If the custodian is compromised or mismanages private keys, the ACS could be stolen (with potentially no recourse). If the custodian faces bankruptcy, users might become unsecured creditors. These risks are not unique to ACS but apply to any crypto asset stored off-chain. The recommendation for mitigating this is for users to self-custody in their own wallets whenever possible, though that comes with its own risk of key management (discussed later).

## **I.2 Issuer-Related Risks**

Access Labs Inc. is a relatively young company (est. 2022) in an emerging sector. Key issuer risks include:

**Operational Risk:** The company might fail to execute its business plan – e.g., fail to attract enough creators or users to sustain the platform. If Access Labs were to go out of business or cease operations, the impact on ACS could be severe: the token's utility depends on the platform being maintained. While ACS and its smart contracts would still exist on Solana, without the issuer's support (updates, promotion, creator onboarding), the ecosystem might stagnate or collapse, causing token value to plummet.

**Key Person Risk:** The project's founder and core team (Mika Honkasalo and others) are instrumental. If one or more key team members leave, become incapacitated, or lose credibility, it could harm project progress and community trust. The team is somewhat small, and key roles might be difficult to replace quickly.

**Regulatory/Legal Risk for Issuer:** Access Labs operates at the intersection of crypto and content. They could face regulatory scrutiny in various jurisdictions (e.g., whether ACS is being used as an unregistered security or whether the platform needs specific licenses). Any enforcement action or legal injunction against Access Labs Inc. could disrupt platform operations. For instance, if a regulator in the US or elsewhere restricted the company's activities, development might slow or the platform might need to geo-block some regions, affecting user growth.

**Financial Risk:** The issuer's financial health is crucial. The company has raised \$1.2M which may or may not be sufficient until the platform becomes self-sustaining. If additional funding is needed and not obtained, the company might run out of capital. That could lead to reduced support or abandonment of the project. There's risk in crypto markets that prolonged downturns affect the company's treasury (especially if they hold a lot of ACS themselves; a declining token price could reduce their resources).

**Reputational Risk:** If the issuer engages in controversial actions (e.g., altering token economics unexpectedly, or a security breach on their platform), reputation loss can translate to user attrition and token sell-off. The issuer must maintain trust with both content creators and token holders.

### **I.3 Crypto-Assets-Related Risks**

These are inherent risks to ACS as a token:

**High Volatility and Loss of Value:** As noted, ACS's market price can fluctuate dramatically with market sentiment. It may "lose its value in part or in full" – indeed, a total loss is possible [66]. Crypto tokens often experience extreme cycles; ACS could drop precipitously due to market downturns, loss of interest, or external events. There is no floor or guaranteed value.

**Lack of Intrinsic Value/Backer:** ACS is not backed by any tangible asset or government. Its value derives from the expectation of usage in the platform. If that expectation diminishes, ACS could theoretically trend towards zero. It is not stable; no one guarantees to redeem ACS for any amount.

**Dilution Risk:** ACS has an inflationary supply (5% annually). If demand doesn't grow at least as fast, the increasing supply can exert downward pressure on price. Holders who do not stake will see their share of total supply shrink. Even those who stake might not fully offset inflation once the network is at equilibrium, so holding ACS long-term could result in dilution if you're not participating.

**Concentration of Holdings:** Early token distribution might be somewhat concentrated (team/investors hold ~15%, plus large allocations for incentives). If any large holders (e.g., a venture fund) decided to sell a big portion once unlocked, it could severely impact price. Furthermore, if creators earn a lot of ACS and decide to liquidate it regularly (to cover their costs), that creates sell pressure. The token's health relies on a balance of buy and sell; if too many stakeholders cash out rewards, price suffers, potentially causing a spiral of less incentive to hold.

**Market Manipulation:** The crypto markets are less regulated; ACS could be subject to pump-and-dump schemes or manipulation by large traders ("whales"). Low liquidity environments are particularly vulnerable. There is a risk of fake volumes or sudden run-ups followed by crashes, which could trap retail investors. While listing on reputable exchanges adds some oversight, crypto is still risky in this regard.

**Correlation and Systemic Crypto Risks:** ACS's price may correlate with the broader crypto market (which historically is highly volatile, influenced by Bitcoin cycles, macro economy, etc.). A general crypto crash could drag ACS down regardless of its individual performance.

**Technology Change Risk:** New content monetization tokens or other technological shifts (for example, if Web2 platforms adopt crypto in a bigger way or a competitor token gains traction) could render ACS less appealing, affecting its value.

## I.4 Project Implementation-Related Risks

These are risks that the project does not unfold as planned:

**Adoption Risk:** The success of Access Protocol heavily depends on adoption by both creators and consumers. If the platform fails to attract more content creators (or if existing ones leave), the value proposition of ACS diminishes (fewer reasons to use the token) [106]. It's possible that creators find the model doesn't generate enough revenue or is too complex for their audience, and revert to traditional methods. On the user side, convincing mainstream users to obtain and stake a crypto token for content might be challenging – many might be deterred by the extra steps (getting a wallet, buying ACS). Low conversion could mean the platform doesn't significantly improve current subscription conversion rates, undermining the whole premise. In short, if adoption remains low (say the user base stagnates or grows very slowly), ACS demand may not grow and the project could fail to reach critical mass.

**Competition:** There are emerging competitors in Web3 content monetization and also incumbent Web2 models (Patreon, Substack, etc.). If a competitor offers a superior or simpler model, Access Protocol could lose out. For example, another crypto project might do a similar token model but on Ethereum with a big brand partner – they could steal market share. Or large platforms might incorporate crypto without needing separate tokens (e.g., Reddit Community Points) – content creators might prefer those channels. Competition could limit Access's growth or force unfavorable changes.

**Technical Implementation Delays or Failures:** Building and maintaining the tech (Solana program, Starknet integration, front-end) is complex. Unforeseen technical hurdles could delay new features (like governance or the AI integration). For instance, Starknet being in development could limit what Access can do there until the network matures. If the Access Scribe platform has bugs or poor UX, creators might not use it. There is also a risk of solana network outages – which happened historically – temporarily affecting user experience (like users unable to stake/unstake during downtime). Frequent technical issues could frustrate users/creators and hamper adoption.

**Scaling and Performance:** As the user base grows, Access's infrastructure needs to scale. Solana can handle high throughput, but the project's off-chain components (like their content hub servers, APIs) need to handle possibly millions of requests if widely used. Any bottlenecks there could cause lag in verifying access, harming user experience. If not addressed, that could slow growth (users won't adopt a laggy platform).

## I.5 Technology-Related Risks

Despite audits and a strong tech stack, the ACS ecosystem faces technology risks:

**Smart Contract Vulnerabilities:** There's always a possibility that an undiscovered bug exists in the smart contracts. If an exploit is found, it could be catastrophic – for instance, an attacker might drain staked tokens, mint unauthorized tokens, or otherwise disrupt the system. While audits greatly reduce this risk, no audit can guarantee 100% bug-free code. The Halborn audit indicates issues were fixed [106], but future updates or unforeseen interactions could introduce vulnerabilities. If such an exploit occurred, it could lead to loss of user funds (staked ACS) or collapse in token confidence. The "Security Services" of the program are critical, and a flaw there is a direct risk to users.

**Blockchain Network Risks:** Solana itself, as underlying infrastructure, has risks: it might experience outages or network splits. A severe outage (like the ~17-hour downtime in Sept 2021, or others in 2022) could prevent Access transactions during that period (meaning users can't newly subscribe or unsubscribe, and reward distribution might halt). If a prolonged or



repeated outage occurs, users/creators might lose trust in the reliability of the service. In worst case, if Solana faced a serious consensus failure or attack (51% attack is unlikely but if it happened or a critical bug in Solana code), ACS could be impacted (e.g., double-spent or stuck transactions). Similarly, Starknet being an evolving tech might have instability or could be exploited (though that risk mainly affects that environment's usage of ACS, which is currently limited).

**Wallet Security Risks:** Users interact via wallets like Phantom. If a user's wallet is compromised (phishing, malware), their ACS could be stolen. That's an individual risk, but widespread incidents (like a supply chain attack on a popular wallet app) could affect many ACS holders. Additionally, if the average user isn't savvy with private key management, that's a risk in adoption (loss of keys = loss of tokens = loss of access).

**Technical Integration Risks:** Access relies on various integrations (with websites, with wallets, possibly with the bridge). If any of these fail – e.g., if the bridge has a bug, tokens could be lost moving between Solana and Starknet; if the content gating API has a security flaw, someone might bypass the paywall without staking by exploiting the off-chain component (though they'd still need to fool the on-chain check). Or, if an integration like a particular wallet doesn't properly support the program, users of that wallet might have issues.

**Quantum Computing Risk:** A long-term theoretical risk: ACS, like most crypto, uses elliptic curve cryptography (ed25519). A sufficiently powerful quantum computer in the future could break these cryptographic signatures, potentially allowing theft of tokens or forging transactions. This is extremely unlikely in the near term but is a background risk to all of blockchain tech.

**Dependence on Third-Party Infrastructure:** Many ACS users will rely on RPC nodes run by providers (e.g., public Solana RPC or services like QuickNode) to interact. If these services are down or censor certain requests, it can hamper usability. Also, Access's own front-end (website) could be targeted by DDoS or censorship, affecting user ability to use the service even if blockchain is up (though tech-savvy users could interact directly with chain, most rely on the UI).

## **I.6 Mitigation Measures**

The project and offeror have taken several measures to mitigate the above risks:

**Transparency & Disclosure:** By publishing this comprehensive white paper and being transparent about tokenomics and risks, the issuer and offeror aim to ensure investors are well-informed, which is a mitigation against misunderstanding risk. An informed community is less likely to panic sell on rumors, for instance, and can make measured decisions.

**Regulatory Compliance:** The act of voluntarily filing a MiCA white paper and seeking regulation shows the issuer/offeror's commitment to compliance, mitigating legal risks. They are effectively future-proofing against regulatory crackdowns by aligning with MiCA early. This reduces the risk of sudden delisting due to regulatory non-compliance in Europe.

**Lock-ups & Vesting:** As mentioned, team and investor lock-ups prevent large token holders from immediately selling huge amounts [redacted]. This significantly mitigates short-term dump risk around listing or unlock events. It phases out selling pressure over time, ideally matching growing demand.

**Audits and Security Practices:** Multiple audits (Halborn, etc.) have been done [redacted]. The code is open source for community audit. The team also likely has internal security reviews for any code changes. They have probably implemented best practices like using the Solana Anchor

framework (if they did) or at least thorough unit tests (the GitHub shows tests) [OBJ] [OBJ]. These reduce the chance of bugs. Additionally, critical operations like the token mint authority are locked in the program's control, meaning no one (including team) can just arbitrarily mint new tokens beyond the inflation schedule, which protects against human misuse.

Insurance / Reserves: While not explicitly stated, some projects maintain treasury reserves or insurance funds in case of hacks or issues to compensate users. Access Labs does have a treasury of tokens; whether they'd use them to compensate in a disaster is not promised, but having a large community fund could potentially serve as a backstop (for example, if a minor bug caused some loss, they could vote to reimburse from community funds – speculative, but a form of potential mitigation).

Community Governance and Decentralization Roadmap: By planning to decentralize decision-making, they mitigate centralization risks and key person risk. If done properly, the network could survive even if Access Labs were gone, run by community contributors. They are also fostering an ecosystem (mention of community projects, maybe grants) to not have everything reliant on one company. E.g., encouraging community-built front-ends or integrations would mitigate if Access's own site had issues – alternate interfaces could emerge.

Market Measures: To mitigate extreme volatility, the token being on many exchanges helps arbitrage which can stabilize price between markets. The team doesn't engage in market making directly as far as known, but they might have partners providing liquidity. They also distributed a large airdrop broadly (2B tokens via CoinGecko to thousands of users), which helps initial decentralization of holders, mitigating whales controlling all liquidity.

User Education and Support: The project provides guides for both creators and supporters. This helps reduce user error (like sending tokens wrong or failing to understand staking). They also maintain active support channels (Discord, etc.) to quickly assist or correct misconceptions that could lead to panic or errors.

## **J. PART J - INFORMATION ON THE SUSTAINABILITY INDICATORS IN RELATION TO ADVERSE IMPACT ON THE CLIMATE AND OTHER ENVIRONMENT-RELATED ADVERSE IMPACTS**

*Adverse impacts on climate and other environment-related adverse impacts.*

### **J.1 Information on principal adverse impacts on the climate and other environment-related adverse impacts of the consensus mechanism**

The ACS token operates across networks such as Solana and Starknet, both of which use consensus mechanisms or execution models that are generally considered more energy-efficient than traditional proof-of-work systems. Solana employs a proof-of-stake (PoS) mechanism with a unique proof-of-history (PoH) component to improve throughput, while Starknet is built as a validity rollup on Ethereum, relying on off-chain computation and on-chain proofs. These models reduce the need for energy-intensive mining, but this does not imply the absence of environmental impact. The actual energy usage and sustainability footprint may vary depending on validator infrastructure, node hardware, geographic distribution, and overall network demand. The ACS token itself does not run on a proprietary blockchain or consensus mechanism; it depends on the underlying infrastructure of these host chains. Therefore, any environmental or sustainability considerations related to ACS are inherently linked to the operational practices and resource profiles of the respective networks it operates on.

| General information                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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| <b>S.1 Name</b><br><i>Name reported in field A.1</i>                                             | LCX                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>S.2 Relevant legal entity identifier</b><br><i>Identifier referred to in field A.2</i>        | 529900SN07Z6RTX8R418                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>S.3 Name of the crypto-asset</b><br><i>Name of the crypto-asset, as reported in field D.2</i> | Access Protocol                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>S.4 Consensus Mechanism</b><br><i>The consensus mechanism, as reported in field H.4</i>       | <p>Solana uses a unique combination of Proof of History (PoH) and Proof of Stake (PoS) to achieve high throughput, low latency, and robust security. Here's a detailed explanation of how these mechanisms work: Core Concepts 1. Proof of History (PoH): Time-Stamped Transactions: PoH is a cryptographic technique that timestamps transactions, creating a historical record that proves that an event has occurred at a specific moment in time. Verifiable Delay Function: PoH uses a Verifiable Delay Function (VDF) to generate a unique hash that includes the transaction and the time it was processed. This sequence of hashes provides a verifiable order of events, enabling the network to efficiently agree on the sequence of transactions. 2. Proof of Stake (PoS): Validator Selection: Validators are chosen to produce new blocks based on the number of SOL tokens they have staked. The more tokens staked, the higher the chance of being selected to validate transactions and produce new blocks. Delegation: Token holders can delegate their SOL tokens to validators, earning rewards proportional to their stake while enhancing the network's security. Consensus Process 1. Transaction Validation: Transactions are broadcast to the network and collected by validators. Each transaction is validated to ensure it meets the network's criteria, such as having correct signatures and sufficient funds. 2. PoH Sequence Generation: A validator generates a sequence of hashes using PoH, each containing a timestamp and the previous hash. This process creates a historical record of transactions, establishing a cryptographic clock for the network. 3. Block Production: The network uses PoS to select a leader validator based on their stake. The leader is responsible for bundling the validated transactions into a block. The leader validator uses the PoH sequence to order transactions within the block,</p> |

|                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                 | <p>ensuring that all transactions are processed in the correct order. 4. Consensus and Finalization: Other validators verify the block produced by the leader validator. They check the correctness of the PoH sequence and validate the transactions within the block. Once the block is verified, it is added to the blockchain. Validators sign off on the block, and it is considered finalized. Security and Economic Incentives</p> <p>1. Incentives for Validators: Block Rewards: Validators earn rewards for producing and validating blocks. These rewards are distributed in SOL tokens and are proportional to the validator's stake and performance. Transaction Fees: Validators also earn transaction fees from the transactions included in the blocks they produce. These fees provide an additional incentive for validators to process transactions efficiently.</p> <p>2. Security: Staking: Validators must stake SOL tokens to participate in the consensus process. This staking acts as collateral, incentivizing validators to act honestly. If a validator behaves maliciously or fails to perform, they risk losing their staked tokens. Delegated Staking: Token holders can delegate their SOL tokens to validators, enhancing network security and decentralization. Delegators share in the rewards and are incentivized to choose reliable validators.</p> <p>3. Economic Penalties: Slashing: Validators can be penalized for malicious behavior, such as double-signing or producing invalid blocks. This penalty, known as slashing, results in the loss of a portion of the staked tokens, discouraging dishonest actions.</p> |
| <p><b>S.5 Incentive Mechanisms and Applicable Fees</b></p> <p>Incentive mechanisms to secure transactions and any fees applicable, as reported in field H.5</p> | <p>Solana uses a combination of Proof of History (PoH) and Proof of Stake (PoS) to secure its network and validate transactions. Here's a detailed explanation of the incentive mechanisms and applicable fees:</p> <p>Incentive Mechanisms</p> <p>4. Validators: Staking Rewards: Validators are chosen based on the number of SOL tokens they have staked. They earn rewards for producing and validating blocks, which are distributed in SOL. The more tokens staked, the higher the chances of being selected to validate transactions and produce new blocks.</p> <p>Transaction Fees: Validators earn a portion of the transaction fees paid by users for the transactions they include in the blocks. This provides an additional financial incentive for validators to process transactions efficiently and maintain the network's integrity.</p> <p>5. Delegators: Delegated Staking: Token holders who do not</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

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|                                                                                                                                                                                                                 | <p>wish to run a validator node can delegate their SOL tokens to a validator. In return, delegators share in the rewards earned by the validators. This encourages widespread participation in securing the network and ensures decentralization.</p> <p>6. Economic Security: Slashing: Validators can be penalized for malicious behavior, such as producing invalid blocks or being frequently offline. This penalty, known as slashing, involves the loss of a portion of their staked tokens. Slashing deters dishonest actions and ensures that validators act in the best interest of the network.</p> <p>Opportunity Cost: By staking SOL tokens, validators and delegators lock up their tokens, which could otherwise be used or sold. This opportunity cost incentivizes participants to act honestly to earn rewards and avoid penalties.</p> <p>Fees Applicable on the Solana Blockchain</p> <p>7. Transaction Fees: Low and Predictable Fees: Solana is designed to handle a high throughput of transactions, which helps keep fees low and predictable. The average transaction fee on Solana is significantly lower compared to other blockchains like Ethereum.</p> <p>Fee Structure: Fees are paid in SOL and are used to compensate validators for the resources they expend to process transactions. This includes computational power and network bandwidth.</p> <p>8. Rent Fees: State Storage: Solana charges rent fees for storing data on the blockchain. These fees are designed to discourage inefficient use of state storage and encourage developers to clean up unused state. Rent fees help maintain the efficiency and performance of the network.</p> <p>9. Smart Contract Fees: Execution Costs: Similar to transaction fees, fees for deploying and interacting with smart contracts on Solana are based on the computational resources required. This ensures that users are charged proportionally for the resources they consume.</p> |
| <b>S.6 Beginning of the period to which the disclosure relates</b>                                                                                                                                              | 2024-05-18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>S.7 End of the period to which the disclosure relates</b>                                                                                                                                                    | 2025-05-18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Mandatory key indicator on energy consumption</b>                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>S.8 Energy consumption</b><br><br>Total amount of energy used for the validation of transactions and the maintenance of the integrity of the distributed ledger of transactions, expressed per calendar year | 39.41209 kWh per year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Sources and methodologies                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>S.9 Energy consumption sources and Methodologies</b><br><br>Sources and methodologies used in relation to the information reported in field S.8 | For the calculation of energy consumptions, the so called "bottom-up" approach is being used. The nodes are considered to be the central key factor for the energy consumption of the network. These assumptions are made on the basis of empirical findings through the use of public information sites, open-source crawlers and crawlers developed in-house. The main determinants for estimating the hardware used within the network are the requirements for operating the client software. The energy consumption of the hardware devices was measured in certified test laboratories. When calculating the energy consumption, we used - if available - the Functionally Fungible Group Digital Token Identifier (FFG DTI) to determine all implementations of the asset of question in scope and we update the mappings regularly, based on data of the Digital Token Identifier Foundation. |

**J.2 Supplementary information on principal adverse impacts on the climate and other environment-related adverse impacts of the consensus mechanism**

| Supplementary key indicators on energy and GHG emissions                                                                                                                                                                                                                                                  |                                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| <b>S.10 Renewable energy consumption</b><br><br>Share of energy used generated from renewable sources, expressed as a percentage of the total amount of energy used per calendar year, for the validation of transactions and the maintenance of the integrity of the distributed ledger of transactions. | 14.770208242%                    |
| <b>S.11 Energy intensity</b><br><br>Average amount of energy used per validated transaction                                                                                                                                                                                                               | 0.00000 kWh                      |
| <b>S.12 Scope 1 DLT GHG emissions – Controlled</b><br><br>Scope 1 GHG emissions per calendar year for the validation of transactions and the maintenance of the integrity of the distributed ledger of transactions                                                                                       | 0.00 tCO <sub>2</sub> e per year |
| <b>S.13 Scope 2 DLT GHG emissions – Purchased</b><br><br>Scope 2 GHG emissions, expressed in tCO <sub>2</sub> e per calendar year for the validation of transactions and the maintenance of the integrity of the distributed ledger of transactions                                                       | 1873.14310 tCO <sub>2</sub> e/a  |

|                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>S.14 GHG intensity</b><br>Average GHG emissions (scope 1 and scope 2) per validated transaction                                                    | 0.00000 kgCO2e per transaction                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Sources and methodologies</b>                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>S.15 Key energy sources and methodologies</b><br>Sources and methodologies used in relation to the information reported in fields S.10 and S.11    | To determine the proportion of renewable energy usage, the locations of the nodes are to be determined using public information sites, open-source crawlers and crawlers developed in-house. If no information is available on the geographic distribution of the nodes, reference networks are used which are comparable in terms of their incentivization structure and consensus mechanism. This geo-information is merged with public information from the European Environment Agency (EEA) and thus determined. |
| <b>S.16 Key GHG sources and methodologies</b><br>Sources and methodologies used in relation to the information reported in fields S.12, S.13 and S.14 | To determine the GHG Emissions, the locations of the nodes are to be determined using public information sites, open-source crawlers and crawlers developed in-house. If no information is available on the geographic distribution of the nodes, reference networks are used which are comparable in terms of their incentivization structure and consensus mechanism. This geo-information is merged with public information from the European Environment Agency (EEA) and thus determined.                        |