

# **White paper drafted under the European Markets in Crypto- Assets Regulation (EU) 2023/1114 for FFG QH1GF1J5H**

# Preamble

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## **01. Date of notification**

2025-10-24

## **02. Statement in accordance with Article 6(3) of Regulation (EU) 2023/1114**

This crypto-asset white paper has not been approved by any competent authority in any Member State of the European Union. The person seeking admission to trading of the crypto-asset is solely responsible for the content of this crypto-asset white paper.

## **03. Compliance statement in accordance with Article 6(6) of Regulation (EU) 2023/1114**

This crypto-asset white paper complies with Title II of Regulation (EU) 2023/1114 of the European Parliament and of the Council 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. Statement in accordance with Article 6(5), points (a), (b), (c), of Regulation (EU) 2023/1114**

The crypto-asset referred to in this crypto-asset white paper may lose its value in part or in full, may not always be transferable and may not be liquid.

## **05. Statement in accordance with Article 6(5), point (d), of Regulation (EU) 2023/1114**

Since the token has multiple functions (hybrid token), these are already conceptually not utility tokens within the meaning of the MiCAR within the definition of Article 3, 1. (9), due to the necessity "exclusively" being intended to provide access to a good or a service supplied by its issuer only.

## **06. Statement in accordance with Article 6(5), points (e) and (f), of Regulation (EU) 2023/1114**

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 or the deposit guarantee schemes under Directive 2014/49/EU of the European Parliament and of the Council.

### **Summary**

## **07. Warning in accordance with Article 6(7), second subparagraph, of Regulation (EU) 2023/1114**

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 or any other offer document pursuant to union or national law.

## **08. Characteristics of the crypto-asset**

The MNT tokens referred to in this white paper are crypto-assets other than EMTs and ARTs, and are issued on the Ethereum and Mantle blockchain (2025-10-20 and according to DTI FFG shown in F.14) with a total number of 6,219,316,768 token. The first activity on Ethereum can be viewed on 2023-06-20 (see <https://etherscan.io/tx/0x8f7867724cfba4b9b1b19ca140711809b40dda9ae245caf7bcff9473a5a7e45e>) and on 2023-07-02 on Mantle (see <https://mantlescan.xyz/tx/0x406af377ea93d459721d73c9c7409a6c5d7af45ac744b8390478308500e12981>).

## **09. Information about the quality and quantity of goods or services to which the utility tokens give access and restrictions on the transferability**

Not applicable.

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

Crypto Risk Metrics GmbH is seeking admission to trading on any Crypto Asset Service Provider platform in the European Union in accordance to Article 5 of REGULATION (EU) 2023/1114 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 31 May 2023 on markets in crypto-assets, and amending Regulations (EU) No 1093/2010 and (EU) No 1095/2010 and Directives 2013/36/EU and (EU) 2019/1937. In accordance to Article 5(4), this crypto-asset white paper may be used by entities admitting the token to trading after Crypto Risk Metrics GmbH as the person responsible for drawing up such white paper has given its consent to its use in writing to the respective Crypto Asset Service Provider.

## **Part A – Information about the offeror or the person seeking admission to trading**

### **A.1 Name**

Crypto Risk Metrics GmbH

### **A.2 Legal form**

2HBR

### **A.3 Registered address**

DE, Lange Reihe 73, 20099 Hamburg, Germany

### **A.4 Head office**

Not applicable.

**A.5 Registration date**

2018-12-03

**A.6 Legal entity identifier**

39120077M9TG001FE242

**A.7 Another identifier required pursuant to applicable national law**

Crypto Risk Metrics GmbH is registered with the commercial register in the the city of Hamburg, Germany, under number HRB 154488.

**A.8 Contact telephone number**

+4915144974120

**A.9 E-mail address**

info@crypto-risk-metrics.com

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

030

**A.11 Parent company**

Not applicable.

**A.12 Members of the management body**

| Name       | Position | Address                                   |
|------------|----------|-------------------------------------------|
| Tim Zölitz | Chairman | Lange Reihe 73, 20099<br>Hamburg, Germany |

**A.13 Business activity**

Crypto Risk Metrics GmbH is as a software-as-a-service company with a focus on regulatory compliance. Due to the regulations laid out in article 5 (4) of the REGULATION (EU) 2023/1114 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 31 May 2023 on markets in crypto-assets, and amending Regulations (EU) No 1093/2010 and (EU) No

1095/2010 and Directives 2013/36/EU and (EU) 2019/1937, Crypto Risk Metrics GmbH aims at providing central services for crypto-asset white papers.

#### **A.14 Parent company business activity**

Not applicable.

#### **A.15 Newly established**

Crypto Risk Metrics GmbH has been established since 2018 and is therefore not newly established (i. e. older than three years).

#### **A.16 Financial condition for the past three years**

Crypto Risk Metrics GmbH's profit after tax for the last three financial years are as follows:

2024 (unaudited): negative 50.891,81 EUR

2023 (unaudited): negative 27.665,32 EUR

2022: 104.283,00 EUR.

As 2023 and 2024 were the years building Software for the MiCAR-Regulation which was not yet in place, revenue streams from these investments are expected to be generated in 2025.

#### **A.17 Financial condition since registration**

This point would only be applicable if the company were newly established and the financial conditions for the past three years had not been provided in the bulletpoint before.

## **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**

Yes

**B.2 Name**

The governance structure of the Mantle project is based on a decentralized autonomous organization (DAO), which exercises collective decision-making power over the protocol, its treasury, and future development. While a legal entity named Mantle Network Ltd. appears to exist, available information suggests that this entity performs administrative or operational support functions only. It does not exercise controlling influence over the crypto-asset or its governance mechanisms. Accordingly, the Mantle DAO should be regarded as the effective governing body of the project, rather than any single legal entity.

**B.3 Legal form**

Not applicable.

**B.4. Registered address**

Not applicable.

**B.5 Head office**

Not applicable.

**B.6 Registration date**

Not applicable.

**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**

Not applicable.

**B.11 Business activity**

Not applicable.

**B.12 Parent company business activity**

Not applicable.

**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**

Not applicable.

**C.2 Legal form**

Not applicable.

**C.3 Registered address**

Not applicable.

**C.4 Head office**

Not applicable.

**C.5 Registration date**

Not applicable.

**C.6 Legal entity identifier**

Not applicable.

**C.7 Another identifier required pursuant to applicable national law**

Not applicable.

**C.8 Parent company**

Not applicable.

**C.9 Reason for crypto-Asset white paper Preparation**

Not applicable.

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

Not applicable.

**C.11 Operator business activity**

Not applicable.

**C.12 Parent company business activity**

Not applicable.

**C.13 Other persons drawing up the crypto-asset white paper according to Article 6(1), second subparagraph, of Regulation (EU) 2023/1114**

Not applicable.

**C.14 Reason for drawing the white paper by persons referred to in Article 6(1), second subparagraph, of Regulation (EU) 2023/1114**

Not applicable.

**Part D – Information about the crypto-asset project****D.1 Crypto-asset project name**

Long Name: "Mantle", Short Name: "MNT" according to the Digital Token Identifier Foundation ([www.dtif.org](http://www.dtif.org), DTI see F.13, FFG DTI see F.14 as of 2025-10-20).

**D.2 Crypto-assets name**

See F.13.

**D.3 Abbreviation**

See F.13.

#### **D.4 Crypto-asset project description**

The Mantle project is a blockchain infrastructure initiative that operates as a modular Layer-2 network built on top of the Ethereum blockchain. Its primary objective is to provide an execution environment for decentralized applications while maintaining interoperability with Ethereum through the use of rollup technology. The project seeks to increase transaction throughput and reduce costs by separating the different layers of blockchain architecture - specifically execution, consensus, and data availability - into distinct components that can be upgraded or replaced independently.

The Mantle Network employs an optimistic rollup model in which transactions are aggregated off-chain and subsequently settled on Ethereum for finality. The network is designed to remain compatible with the Ethereum Virtual Machine (EVM), allowing existing smart contracts and developer tools to function without modification. A particular focus of the project lies in improving the cost-efficiency of data availability through integration with external data-availability providers.

Governance within the Mantle ecosystem is organized through token-based voting mechanisms that enable participants to propose and decide on protocol-related matters, treasury allocations, and ecosystem initiatives. The project maintains a decentralized governance framework derived from the earlier BitDAO structure, through which the community oversees protocol development and the use of treasury resources.

The Mantle project does not represent a legal entity in itself but rather a decentralized technological network governed by its community participants. The operation of the network and the associated crypto-asset are not linked to ownership or enforceable rights in a corporate sense, but instead confer participation and governance capabilities within the blockchain protocol's framework.

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

| Name | Position | Address |
|------|----------|---------|
|      |          |         |

|                     |                                                                                                                                                                                 |                                                                                                                                                                                                  |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mantle Network Ltd. | Mantle Network Ltd. appears to act as an administrative and operational support entity for the Mantle ecosystem without exercising controlling influence over the crypto-asset. | registered in the United Kingdom, although third-party sources indicate potential operational presence in Singapore. The exact and final address of this entity cannot be conclusively verified. |
| Jordi Alexander     | Co-Founder                                                                                                                                                                      | Could not be identified.                                                                                                                                                                         |
| Arjun Krishan Kalsy | Co-Founder                                                                                                                                                                      | Could not be identified.                                                                                                                                                                         |
| Brian Trunzo        | Chief Growth Officer                                                                                                                                                            | Could not be identified.                                                                                                                                                                         |

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

The token does not classify as a utility token.

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

Not applicable.

#### **D.8 Plans for the token**

The Mantle project has evolved through several developmental phases since its inception and continues to follow a structured roadmap aimed at advancing the technical and operational capacity of its modular Layer-2 network. The project originated in 2022 under the initiative of the BitDAO community, which proposed the creation of a Layer-2 blockchain architecture designed to operate on top of Ethereum. Following community approval, the concept was formally introduced under the name "Mantle" in November 2022. In early 2023, the project launched its public test network, providing developers with an opportunity to evaluate the functionality of the modular design and to test compatibility with existing Ethereum-based applications. In July 2023,

the Mantle mainnet was released, marking the transition from a test environment to an operational network.

Looking forward (according to <https://docs.mantle.xyz/network/system-information/roadmap>, accessed 2025-10-24), the roadmap outlines several planned objectives. These include the completion of the migration to a ZK-based rollup model, the decentralisation of sequencing and validation components, and the expansion of interoperability features to enable communication between Layer-2 networks. Additional milestones include the continued development of tools for decentralized finance (DeFi), non-fungible tokens (NFTs), and institutional on-chain applications, along with initiatives to broaden community participation and governance through ecosystem incentives and treasury deployments.

Resource allocation within the Mantle framework is managed through community governance, with funds primarily dedicated to protocol development, network maintenance, ecosystem support, and research into scalability technologies. The precise distribution of resources may vary over time as the community evaluates priorities through formal governance proposals.

It should be noted that all forward-looking statements and planned milestones are subject to uncertainty. The realization of the anticipated developments depends on a range of technical, operational, market, and regulatory factors. There is no assurance that the described milestones will be achieved within the expected timeframe, or at all, and actual progress may differ materially from the published roadmap.

#### **D.9 Resource allocation**

According to the information disclosed by the Mantle project (<https://docs.mantle.xyz/governance/parameters/tokenomics>, accessed 2025-10-22), public data on the token's supply and allocation are available and describe the relative distribution between circulating supply and treasury holdings. The total token supply of MNT is reported to amount to approximately 6,219,316,768 MNT. Of this total, around 3,250,000,000 MNT are currently in circulation, while the remaining portion - approximately 49 % of the total supply - is held in the project's treasury under

community governance. These treasury holdings are intended to be used for ecosystem development, liquidity programs, and governance-related initiatives as determined through community proposals.

The temporary token distribution can be traced on-chain on Ethereum:

<https://etherscan.io/token/0x3c3a81e81dc49a522a592e7622a7e711c06bf354#balances>

On Mantle:

<https://mantlescan.xyz/token/0xDeadDeAddeAddEaDdeadDEaDDEAdDeaDDeAD0000#balances>

Investors must be aware that a public blockchain address cannot necessarily be attributed to a single natural or legal person, which limits the ability to determine precise economic control or potential future market actions. Such limitations, as well as future token unlocks or vesting changes, may affect the circulating supply and could have an impact on the token's market value.

#### **D.10 Planned use of Collected funds or crypto-Assets**

Not applicable, as this white paper was drawn up for the admission to trading and not for collecting funds for the crypto-asset-project.

## **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**

The white paper concerns the admission to trading (i. e. ATTR) on any Crypto Asset Service Providers platform that has obtained the written consent of Crypto Risk Metrics GmbH as the person drafting this white paper.

**E.2 Reasons for public offer or admission to trading**

As already stated in A.13, Crypto Risk Metrics GmbH aims to provide central services to draw up crypto-asset white papers in accordance to COMMISSION IMPLEMENTING REGULATION (EU) 2024/2984.

**E.3 Fundraising target**

Not applicable, as this white paper is written to support admission to trading and not for the initial offer to the public.

**E.4 Minimum subscription goals**

Not applicable, as this white paper is written to support admission to trading and not for the initial offer to the public.

**E.5 Maximum subscription goals**

Not applicable, as this white paper is written to support admission to trading and not for the initial offer to the public.

**E.6 Oversubscription acceptance**

Not applicable, as this white paper is written to support admission to trading and not for the initial offer to the public.

**E.7 Oversubscription allocation**

Not applicable, as this white paper is written to support admission to trading and not for the initial offer to the public.

**E.8 Issue price**

Not applicable, as this white paper is written to support admission to trading and not for the initial offer to the public.

**E.9 Official currency or any other crypto-assets determining the issue price**

Not applicable, as this white paper is written to support admission to trading and not for the initial offer to the public.

**E.10 Subscription fee**

Not applicable, as this white paper is written to support admission to trading and not for the initial offer to the public.

**E.11 Offer price determination method**

Once the token is admitted to trading its price will be determined by demand (buyers) and supply (sellers).

**E.12 Total number of offered/traded crypto-assets**

The total supply of the crypto-asset is, according to the the crypto-asset project (<https://docs.mantle.xyz/governance/parameters/tokenomics>, accessed 2025-10-22) set at 6,219,316,768 units. Investors should note that changes in the token supply can have a negative impact. The effective amount of tokens available on the market depends on the number of tokens released by the issuer or other parties at any given time, as well as potential reductions through token “burning.” As a result, the circulating supply may differ from the total supply.

**E.13 Targeted holders**

ALL

**E.14 Holder restrictions**

The Holder restrictions are subject to the rules applicable to the Crypto Asset Service Provider as well as additional restrictions the Crypto Asset Service Providers might set in force.

**E.15 Reimbursement notice**

Not applicable, as this white paper is written to support admission to trading and not for the initial offer to the public.

**E.16 Refund mechanism**

Not applicable, as this white paper is written to support admission to trading and not for the initial offer to the public.

**E.17 Refund timeline**

Not applicable, as this white paper is written to support admission to trading and not for the initial offer to the public.

**E.18 Offer phases**

Not applicable, as this white paper is written to support admission to trading and not for the initial offer to the public.

**E.19 Early purchase discount**

Not applicable, as this white paper is written to support admission to trading and not for the initial offer to the public.

**E.20 Time-limited offer**

Not applicable, as this white paper is written to support admission to trading and not for the initial offer to the public.

**E.21 Subscription period beginning**

Not applicable, as this white paper is written to support admission to trading and not for the initial offer to the public.

**E.22 Subscription period end**

Not applicable, as this white paper is written to support admission to trading and not for the initial offer to the public.

**E.23 Safeguarding arrangements for offered funds/crypto- Assets**

Not applicable, as this white paper is written to support admission to trading and not for the initial offer to the public.

**E.24 Payment methods for crypto-asset purchase**

The payment methods are subject to the respective capabilities of the Crypto Asset Service Provider listing the crypto-asset.

**E.25 Value transfer methods for reimbursement**

Not applicable, as this white paper is written to support admission to trading and not for the initial offer to the public.

**E.26 Right of withdrawal**

Not applicable, as this white paper is written to support admission to trading and not for the initial offer to the public.

**E.27 Transfer of purchased crypto-assets**

The transfer of purchased crypto-assets are subject to the respective capabilities of the Crypto Asset Service Provider listing the crypto-asset.

**E.28 Transfer time schedule**

Not applicable, as this white paper is written to support admission to trading and not for the initial offer to the public.

**E.29 Purchaser's technical requirements**

The technical requirements that the purchaser is required to fulfil to hold the crypto-assets of purchased crypto-assets are subject to the respective capabilities of the Crypto Asset Service Provider listing the crypto-asset.

**E.30 Crypto-asset service provider (CASP) name**

Not applicable.

**E.31 CASP identifier**

Not applicable.

**E.32 Placement form**

Not applicable.

**E.33 Trading platforms name**

The trading on all MiCAR-compliant trading platforms is sought.

**E.34 Trading platforms Market identifier code (MIC)**

Not applicable.

**E.35 Trading platforms access**

This depends on the trading platform listing the asset.

**E.36 Involved costs**

This depends on the trading platform listing the asset. Furthermore, costs may occur for making transfers out of the platform (i. e. "gas costs" for blockchain network use that may exceed the value of the crypto-asset itself).

**E.37 Offer expenses**

Not applicable, as this crypto-asset white paper concerns the admission to trading and not the offer of the token to the public.

**E.38 Conflicts of interest**

MiCAR-compliant Crypto Asset Service Providers shall have strong measurements in place in order to manage conflicts of interests. Due to the broad audience this white-paper is addressing, potential investors should always check the conflicts of Interest policy of their respective counterparty.

**E.39 Applicable law**

Not applicable, as it is referred to on "offer to the public" and in this white-paper, the admission to trading is sought.

**E.40 Competent court**

Not applicable, as it is referred to on "offer to the public" and in this white-paper, the admission to trading is sought.

## **Part F – Information about the crypto-assets**

### **F.1 Crypto-asset type**

The crypto-asset described in the white paper is classified as a crypto-asset under the Markets in Crypto-Assets Regulation (MiCAR) but does not qualify as an electronic money token (EMT) or an asset-referenced token (ART). It is a digital representation of value that can be stored and transferred using distributed ledger technology (DLT) or similar technology, without embodying or conferring any rights to its holder.

The asset does not aim to maintain a stable value by referencing an official currency, a basket of assets, or any other underlying rights. Instead, its valuation is entirely market-driven, based on supply and demand dynamics, and not supported by a stabilization mechanism. It is neither pegged to any fiat currency nor backed by any external assets, distinguishing it clearly from EMTs and ARTs.

Furthermore, the crypto-asset is not categorized as a financial instrument, deposit, insurance product, pension product, or any other regulated financial product under EU law. It does not grant financial rights, voting rights, or any contractual claims to its holders, ensuring that it remains outside the scope of regulatory frameworks applicable to traditional financial instruments.

### **F.2 Crypto-asset functionality**

The MNT token functions as the native and governance asset within the Mantle Network, a modular Layer-2 blockchain built on top of Ethereum. Its primary functional purpose is to facilitate network operations, participate in governance decisions, and enable value transfer within the ecosystem.

From a technical perspective, MNT is used to pay transaction fees on the Mantle Network, thereby compensating network operators for processing and validating transactions. As a governance token, it allows holders to submit and vote on proposals concerning protocol upgrades, treasury allocations, and other decisions relevant to the network's evolution. These governance processes are conducted through on-chain mechanisms that ensure transparency and traceability of outcomes.

Beyond its role in governance and transaction settlement, MNT may also serve as a unit of account for certain incentive and liquidity programs determined through community governance. The token can be allocated to ecosystem participants, developers, or validators as part of initiatives designed to support network activity and decentralization. However, such allocations and related incentive mechanisms are subject to future governance approval and may vary over time.

It is important to emphasize that holding MNT does not confer ownership rights, claims to profits, or any legally enforceable entitlements in relation to a specific entity or the underlying protocol. The token's functionality is limited to its technical and governance-related purposes within the Mantle ecosystem, and its value or utility depends on continued adoption and operation of the network.

### **F.3 Planned application of functionalities**

See D.8.

**A description of the characteristics of the crypto asset, including the data necessary for classification of the crypto-asset white paper in the register referred to in Article 109 of Regulation (EU) 2023/1114, as specified in accordance with paragraph 8 of that Article**

### **F.4 Type of crypto-asset white paper**

The white paper type is "other crypto-assets" (i. e. "OTHR").

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

The white paper submission type is "NEWT", which stands for new token.

### **F.6 Crypto-asset characteristics**

The tokens are crypto-assets other than EMTs and ARTs, which are available on the Ethereum and Mantle blockchain. The tokens are fungible (up to 18 digits after the decimal point) with a total supply of 6,219,316,768 units. The tokens are a digital representation of value, and have no inherent rights attached as well as no intrinsic utility.

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

See F.13.

**F.8 Website of the issuer**

<https://group.mantle.xyz/>

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

2025-11-24

**F.10 Publication date**

2025-11-24

**F.11 Any other services provided by the issuer**

It is not possible to exclude a possibility that the issuer of the token provides or will provide other services not covered by Regulation (EU) 2023/1114 (i.e. MiCAR).

**F.12 Language or languages of the crypto-asset white paper**

EN

**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**

K1KRW1TFQ, COD7M4H0R

**F.14 Functionally fungible group digital token identifier, where available**

QH1GF1J5H

**F.15 Voluntary data flag**

Mandatory.

**F.16 Personal data flag**

The white paper does contain personal data.

**F.17 LEI eligibility**

The issuer should be eligible for a Legal Entity Identifier.

## **F.18 Home Member State**

Germany

## **F.19 Host Member States**

Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden

# **Part G – Information on the rights and obligations attached to the crypto-assets**

## **G.1 Purchaser rights and obligations**

The crypto-asset does not grant any legally enforceable or contractual rights or obligations to its holders or purchasers.

Any functionalities accessible through the underlying technology are of a purely technical or operational nature and do not constitute rights comparable to ownership, profit participation, governance, or similar entitlements known from traditional financial instruments.

Accordingly, holders do not acquire any claim capable of legal enforcement against the issuer or any third party.

## **G.2 Exercise of rights and obligations**

As the crypto-asset does not establish any legally enforceable rights or obligations, there are no applicable procedures or conditions for their exercise.

Any interaction or functionality that may be available within the technical infrastructure of the project - such as participation mechanisms or protocol-level features - serves an operational purpose only and does not create or evidence a contractual or statutory entitlement.

### **G.3 Conditions for modifications of rights and obligations**

Because the crypto-asset does not confer legally enforceable rights or obligations, there are no conditions or mechanisms under which such rights could be modified.

Adjustments to the technical protocol, smart contract logic, or related systems may occur in the ordinary course of development or maintenance.

Such changes do not alter any legal position of holders, as no contractual or regulatory rights exist. Holders should not interpret technical updates or governance-related changes as amendments to legally binding entitlements.

### **G.4 Future public offers**

Information on the future offers to the public of crypto-assets were not available at the time of writing this white paper (2025-10-20).

### **G.5 Issuer retained crypto-assets**

According to the information disclosed by the Mantle project (<https://docs.mantle.xyz/governance/parameters/tokenomics>, accessed 2025-10-22), public data on the token's supply and allocation are available and describe the relative distribution between circulating supply and treasury holdings. The total token supply of MNT is reported to amount to approximately 6,219,316,768 MNT. Of this total, around 3,250,000,000 MNT are currently in circulation, while the remaining portion - approximately 49 % of the total supply - is held in the project's treasury under community governance. These treasury holdings are intended to be used for ecosystem development, liquidity programs, and governance-related initiatives as determined through community proposals and can be interpreted as issuer-retained.

The temporary token distribution can be traced on-chain on Ethereum:

<https://etherscan.io/token/0x3c3a81e81dc49a522a592e7622a7e711c06bf354#balances>

On Mantle:

<https://mantlescan.xyz/token/0xDeadDeAddeAddEaDdeadDEaDDEAdDeaDDeAD0000#balances>

Investors must be aware that a public blockchain address cannot necessarily be attributed to a single natural or legal person, which limits the ability to determine precise economic control or potential future market actions. Such limitations, as well as future token unlocks or vesting changes, may affect the circulating supply and could have an impact on the token's market value.

#### **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**

The admission to trading is sought.

#### **G.10 Crypto-assets purchase or sale modalities**

Not applicable, as this white paper is written to support admission to trading and not for the initial offer to the public.

#### **G.11 Crypto-assets transfer restrictions**

The crypto-assets as such do not have any transfer restrictions and are generally freely transferable. The Crypto Asset Service Providers can impose their own restrictions in agreements they enter with their clients. The Crypto Asset Service Providers may impose restrictions to buyers and sellers in accordance with applicable laws and internal policies and terms.

**G.12 Supply adjustment protocols**

No, there are no fixed protocols that can increase or decrease the supply implemented as of 2025-10-17. Also, it is possible to decrease the circulating supply, by transferring crypto-assets to so called "burn-addresses", which are addresses that render the crypto-asset "non-transferable" after sent to those addresses.

**G.13 Supply adjustment mechanisms**

For the crypto-asset in scope, the supply is limited to 6,219,316,768 tokens according to the crypto-asset project (<https://docs.mantle.xyz/governance/parameters/tokenomics>, accessed 2025-10-22). Investors should note that changes in the token supply can have a negative impact.

**G.14 Token value protection schemes**

No, the token does not have value protection schemes.

**G.15 Token value protection schemes description**

Not applicable.

**G.16 Compensation schemes**

No, the token does not have compensation schemes.

**G.17 Compensation schemes description**

Not applicable.

**G.18 Applicable law**

Applicable law likely depends on the location of any particular transaction with the token.

**G.19 Competent court**

Competent court likely depends on the location of any particular transaction with the token.

## Part H – information on the underlying technology

### H.1 Distributed ledger technology (DTL)

See F.13.

### H.2 Protocols and technical standards

The crypto asset that is the subject of this white paper is available on multiple DLT networks. These include: Ethereum and Mantle. In general, when evaluating crypto assets, the total number of tokens issued across different networks must always be taken into account, as spillover effects can be adverse for investors.

The following applies to Ethereum:

The crypto-asset operates on a well-defined set of protocols and technical standards that are intended to ensure its security, decentralization, and functionality. It is running on the Ethereum blockchain. Below are some of the key ones:

#### 1. Network Protocols

The crypto-asset follows a decentralized, peer-to-peer (P2P) protocol where nodes communicate over the crypto-asset's DevP2P protocol using RLPx for data encoding.

- Transactions and smart contract execution are secured through Proof-of-Stake (PoS) consensus.
- Validators propose and attest blocks in Ethereum's Beacon Chain, finalized through Casper FFG.
- The Ethereum Virtual Machine (EVM) executes smart contracts using Turing-complete bytecode.

#### 2. Transaction and Address Standards

crypto-asset Address Format: 20-byte addresses derived from Keccak-256 hashing of public keys.

Transaction Types:

- Legacy Transactions (pre-EIP-1559)

- Type 0 (Pre-EIP-1559 transactions)
- Type 1 (EIP-2930: Access list transactions)
- Type 2 (EIP-1559: Dynamic fee transactions with base fee burning)

The Pectra upgrade introduces EIP-7702, a transformative improvement to account abstraction. This allows externally owned accounts (EOAs) to temporarily act as smart contract wallets during a transaction. It provides significant flexibility, enabling functionality such as sponsored gas payments and batched operations without changing the underlying account model permanently.

### 3. Blockchain Data Structure & Block Standards

- the crypto-asset's blockchain consists of accounts, smart contracts, and storage states, maintained through Merkle Patricia Trees for efficient verification.

Each block contains:

- Block Header: Parent hash, state root, transactions root, receipts root, timestamp, gas limit, gas used, proposer signature.
- Transactions: Smart contract executions and token transfers.
- Block Size: No fixed limit; constrained by the gas limit per block (variable over time). In line with Ethereum's scalability roadmap, Pectra includes EIP-7691, which increases the maximum number of "blobs" (data chunks introduced with EIP-4844) per block. This change significantly boosts the data availability layer used by rollups, supporting cheaper and more efficient Layer 2 scalability.

### 4. Upgrade & Improvement Standards

Ethereum follows the Ethereum Improvement Proposal (EIP) process for upgrades.

The following applies to Mantle:

Mantle is built upon Ethereum Layer 2 standards using an Optimistic Rollup framework. It features a modular design where execution, settlement, and data availability are

decoupled. For data availability, it integrates EigenDA, allowing the network to remain efficient and scalable while maintaining Ethereum compatibility.

### **H.3 Technology used**

The crypto asset that is the subject of this white paper is available on multiple DLT networks. These include: Ethereum and Mantle. In general, when evaluating crypto assets, the total number of tokens issued across different networks must always be taken into account, as spillover effects can be adverse for investors.

The following applies to Ethereum:

1. Decentralized Ledger: The Ethereum blockchain acts as a decentralized ledger for all token transactions, with the intention to preserving an unalterable record of token transfers and ownership to ensure both transparency and security.
2. Private Key Management: To safeguard their token holdings, users must securely store their wallet's private keys and recovery phrases.
3. Cryptographic Integrity: Ethereum employs elliptic curve cryptography to validate and execute transactions securely, intended to ensure the integrity of all transfers. The Keccak-256 (SHA-3 variant) Hashing Algorithm is used for hashing and address generation. The crypto-asset uses ECDSA with secp256k1 curve for key generation and digital signatures. Next to that, BLS (Boneh-Lynn-Shacham) signatures are used for validator aggregation in PoS.

The following applies to Mantle:

Mantle implements a modular blockchain architecture that separates execution (via the EVM), data availability (via EigenDA), and settlement (on Ethereum). This approach enhances scalability, reduces transaction costs, and ensures compatibility with existing Ethereum tooling. It also uses multi-party computation to reduce withdrawal times of the optimistic rollup.

#### **H.4 Consensus mechanism**

The crypto asset that is the subject of this white paper is available on multiple DLT networks. These include: Ethereum and Mantle. In general, when evaluating crypto assets, the total number of tokens issued across different networks must always be taken into account, as spillover effects can be adverse for investors.

The following applies to Ethereum:

The crypto-asset's Proof-of-Stake (PoS) consensus mechanism, introduced with The Merge in 2022, replaces mining with validator staking. Validators must stake at least 32 ETH every block a validator is randomly chosen to propose the next block. Once proposed the other validators verify the blocks integrity. The network operates on a slot and epoch system, where a new block is proposed every 12 seconds, and finalization occurs after two epochs (~12.8 minutes) using Casper-FFG. The Beacon Chain coordinates validators, while the fork-choice rule (LMD-GHOST) ensures the chain follows the heaviest accumulated validator votes. Validators earn rewards for proposing and verifying blocks, but face slashing for malicious behavior or inactivity. PoS aims to improve energy efficiency, security, and scalability, with future upgrades like Proto-Danksharding enhancing transaction efficiency.

The following applies to Mantle:

Mantle does not operate a native consensus layer. Instead, it posts transaction data to its data availability layer EigenDA and validity certificates to Ethereum, inheriting its security model. It uses optimistic rollups with fraud proofs to ensure correctness of off-chain execution and trustless settlement.

#### **H.5 Incentive mechanisms and applicable fees**

The crypto asset that is the subject of this white paper is available on multiple DLT networks. These include: Ethereum and Mantle. In general, when evaluating crypto assets, the total number of tokens issued across different networks must always be taken into account, as spillover effects can be adverse for investors.

The following applies to Ethereum:

The crypto-asset's PoS system secures transactions through validator incentives and economic penalties. Validators stake at least 32 ETH and earn rewards for proposing blocks, attesting to valid ones, and participating in sync committees. Rewards are paid in newly issued ETH and transaction fees. Under EIP-1559, transaction fees consist of a base fee, which is burned to reduce supply, and an optional priority fee (tip) paid to validators. Validators face slashing if they act maliciously and incur penalties for inactivity. This system aims to increase security by aligning incentives while making the crypto-asset's fee structure more predictable and deflationary during high network activity.

The following applies to Mantle:

Participants in the Mantle ecosystem, such as sequencers and data availability providers, are incentivized through network fees. Thanks to the modular setup and off-chain execution, transaction fees are significantly reduced compared to Ethereum mainnet. To get crypto-assets in and out of Mantle, a special smart contract on Ethereum is used. Since there is no consensus mechanism on L2 an additional mechanism ensures that only existing funds can be withdrawn from L2. When a user wants to withdraw funds, that user needs to submit a withdrawal request on L1. If this request remains undisputed for a period of time the funds can be withdrawn. During this time period Mantle validators can dispute the claim, which will start a dispute resolution process. This process is designed with economic incentives for correct behavior of all participants.

#### **H.6 Use of distributed ledger technology**

No, DLT not operated by the issuer, offeror, a person seeking admission to trading or a third-party acting on the issuer's their behalf.

#### **H.7 DLT functionality description**

Not applicable.

## **H.8 Audit**

Since the question of “technology” is understood in a broad sense, the answer to the question of whether an examination of the “technology used” has been carried out is “no, we cannot guarantee that all parts of the technology used have been examined.” This is because this report focuses on risks and we cannot guarantee that every part of the technology used has been examined.

## **H.9 Audit outcome**

Not applicable.

# **Part I – Information on risks**

## **I.1 Offer-related risks**

### 1. Regulatory and Compliance

This white paper has been prepared with utmost caution; however, uncertainties in the regulatory requirements and future changes in regulatory frameworks could potentially impact the token's legal status and its tradability. There is also a high probability that other laws will come into force, changing the rules for the trading of the token. Therefore, such developments shall be monitored and acted upon accordingly.

### 2. Operational and Technical

**Blockchain Dependency:** The token is entirely dependent on the blockchain the crypto-asset is issued upon. Any issues, such as downtime, congestion, or security vulnerabilities within the blockchain, could adversely affect the token's functionality.

**Smart Contract Risks:** Smart contracts governing the token may contain hidden vulnerabilities or bugs that could disrupt the token offering or distribution processes.

**Connection Dependency:** As the trading of the token also involves other trading venues, technical risks such as downtime of the connection or faulty code are also possible.

Human errors: Due to the irrevocability of blockchain-transactions, approving wrong transactions or using incorrect networks/addresses will most likely result in funds not being accessibly anymore.

Custodial risk: When admitting the token to trading, the risk of losing clients assets due to hacks or other malicious acts is given. This is due to the fact the token is hold in custodial wallets for the customers.

### 3. Market and Liquidity

Volatility: The token will most likely be subject to high volatility and market speculation. Price fluctuations could be significant, posing a risk of substantial losses to holders.

Liquidity Risk: Liquidity is contingent upon trading activity levels on decentralized exchanges (DEXs) and potentially on centralized exchanges (CEXs), should they be involved. Low trading volumes may restrict the buying and selling capabilities of the tokens.

### 4. Counterparty

As the admission to trading involves the connection to other trading venues, counterparty risks arise. These include, but are not limited to, the following risks:

General Trading Platform Risk: The risk of trading platforms not operating to the highest standards is given. Examples like FTX show that especially in nascent industries, compliance and oversight-frameworks might not be fully established and/or enforced.

Listing or Delisting Risks: The listing or delisting of the token is subject to the trading partners internal processes. Delisting of the token at the connected trading partners could harm or completely halt the ability to trade the token.

### 5. Liquidity

Liquidity of the token can vary, especially when trading activity is limited. This could result in high slippage when trading a token.

### 6. Failure of one or more Counterparties

Another risk stems from the internal operational processes of the counterparties used. As there is no specific oversight other than the typical due diligence check, it cannot be guaranteed that all counterparties adhere to the best market standards.

Bankruptcy Risk: Counterparties could go bankrupt, possibly resulting in a total loss for the clients assets hold at that counterparty.

## 7. Information asymmetry

Different groups of participants may not have the same access to technical details or governance information, leading to uneven decision-making and potential disadvantages for less informed investors.

### **I.2 Issuer-related risks**

#### 1. Insolvency

As with every other commercial endeavor, the risk of insolvency of entities involved in the project is given. This could be caused by but is not limited to lack of interest from the public, lack of funding, incapacitation of key developers and project members, force majeure (including pandemics and wars) or lack of commercial success or prospects.

#### 2. Counterparty

In order to operate, entities involved in the project have most likely engaged in different business relationships with one or more third parties on which they and the network strongly depend on. Loss or changes in the leadership or key partners of entities involved in the project and/or the respective counterparties can lead to disruptions, loss of trust, or project failure. This could result in a total loss of economic value for the crypto-asset holders.

#### 3. Legal and Regulatory Compliance

Cryptocurrencies and blockchain-based technologies are subject to evolving regulatory landscapes worldwide. Regulations vary across jurisdictions and may be subject to significant changes. Non-compliance can result in investigations, enforcement actions, penalties, fines, sanctions, or the prohibition of the trading of the crypto-asset impacting

its viability and market acceptance. This could also result in entities involved in the project to be subject to private litigation. The aforementioned would most likely also lead to changes with respect to trading of the crypto-asset that may negatively impact the value, legality, or functionality of the crypto-asset.

#### 4. Operational

Failure to develop or maintain effective internal control, or any difficulties encountered in the implementation of such controls, or their improvement could harm the business, causing disruptions, financial losses, or reputational damage of entities involved in the project.

#### 5. Industry

The network and all entities involved in the project are and will be subject to all of the risks and uncertainties associated with a crypto-project, where the token issued has zero intrinsic value. History has shown that most of these projects resulted in financial losses for the investors and were only set-up to enrich a few insiders with the money from retail investors.

#### 6. Reputational

The network and all entities involved in the project face the risk of negative publicity, whether due to, without limitation, operational failures, security breaches, or association with illicit activities, which can damage the reputation of the network and all entities involved in the project and, by extension, the value and acceptance of the crypto-asset.

#### 7. Competition

There are numerous other crypto-asset projects in the same realm, which could have an effect on the crypto-asset in question.

#### 8. Unanticipated Risk

In addition to the risks included in this section, there might be other risks that cannot be foreseen. Additional risks may also materialize as unanticipated variations or combinations of the risks discussed.

### **I.3 Crypto-assets-related risks**

#### **1. Valuation**

As the crypto-asset does not have any intrinsic value, and grants neither rights nor obligations, the only mechanism to determine the price is supply and demand. Historically, most crypto-assets have dramatically lost value and were not a beneficial investment for the investors. Therefore, investing in these crypto-assets poses a high risk, and the loss of funds can occur.

#### **2. Market Volatility**

Crypto-asset prices are highly susceptible to dramatic fluctuations influence by various factors, including market sentiment, regulatory changes, technological advancements, and macroeconomic conditions. These fluctuations can result in significant financial losses within short periods, making the market highly unpredictable and challenging for investors. This is especially true for crypto-assets without any intrinsic value, and investors should be prepared to lose the complete amount of money invested in the respective crypto-assets.

#### **3. Liquidity Challenges**

Some crypto-assets suffer from limited liquidity, which can present difficulties when executing large trades without significantly impacting market prices. This lack of liquidity can lead to substantial financial losses, particularly during periods of rapid market movements, when selling assets may become challenging or require accepting unfavorable prices.

#### **4. Asset Security**

Crypto-assets face unique security threats, including the risk of theft from exchanges or digital wallets, loss of private keys, and potential failures of custodial services. Since crypto transactions are generally irreversible, a security breach or mismanagement can result in the permanent loss of assets, emphasizing the importance of strong security measures and practices.

#### **5. Scams**

The irrevocability of transactions executed using blockchain infrastructure, as well as the pseudonymous nature of blockchain ecosystems, attracts scammers. Therefore, investors in crypto-assets must proceed with a high degree of caution when investing in if they invest in crypto-assets. Typical scams include – but are not limited to – the creation of fake crypto-assets with the same name, phishing on social networks or by email, fake giveaways/airdrops, identity theft, among others.

#### 6. Blockchain Dependency

Any issues with the blockchain used, such as network downtime, congestion, or security vulnerabilities, could disrupt the transfer, trading, or functionality of the crypto-asset.

#### 7. Smart Contract Vulnerabilities

The smart contract used to issue the crypto-asset could include bugs, coding errors, or vulnerabilities which could be exploited by malicious actors, potentially leading to asset loss, unauthorized data access, or unintended operational consequences.

#### 8. Privacy Concerns

All transactions on the blockchain are permanently recorded and publicly accessible, which can potentially expose user activities. Although addresses are pseudonymous, the transparent and immutable nature of blockchain allows for advanced forensic analysis and intelligence gathering. This level of transparency can make it possible to link blockchain addresses to real-world identities over time, compromising user privacy.

#### 9. Regulatory Uncertainty

The regulatory environment surrounding crypto-assets is constantly evolving, which can directly impact their usage, valuation, and legal status. Changes in regulatory frameworks may introduce new requirements related to consumer protection, taxation, and anti-money laundering compliance, creating uncertainty and potential challenges for investors and businesses operating in the crypto space. Although the crypto-asset do not create or confer any contractual or other obligations on any party, certain regulators may nevertheless qualify the crypto-asset as a security or other financial instrument under their applicable law, which in turn would have drastic consequences

for the crypto-asset, including the potential loss of the invested capital in the asset. Furthermore, this could lead to the sellers and its affiliates, directors, and officers being obliged to pay fines, including federal civil and criminal penalties, or make the crypto-asset illegal or impossible to use, buy, or sell in certain jurisdictions. On top of that, regulators could take action against the network and all entities involved in the project as well as the trading platforms if the regulators view the token as an unregistered offering of securities or the operations otherwise as a violation of existing law. Any of these outcomes would negatively affect the value and/or functionality of the crypto-asset and/or could cause a complete loss of funds of the invested money in the crypto-asset for the investor.

#### 10. Counterparty risk

Engaging in agreements or storing crypto-assets on exchanges introduces counterparty risks, including the failure of the other party to fulfill their obligations. Investors may face potential losses due to factors such as insolvency, regulatory non-compliance, or fraudulent activities by counterparties, highlighting the need for careful due diligence when engaging with third parties.

#### 11. Reputational concerns

Crypto-assets are often subject to reputational risks stemming from associations with illegal activities, high-profile security breaches, and technological failures. Such incidents can undermine trust in the broader ecosystem, negatively affecting investor confidence and market value, thereby hindering widespread adoption and acceptance.

#### 12. Technological Innovation

New technologies or platforms could render the network's design less competitive or even break fundamental parts (i.e., quantum computing might break cryptographic algorithms used to secure the network), impacting adoption and value. Participants should approach the crypto-asset with a clear understanding of its speculative and volatile nature and be prepared to accept these risks and bear potential losses, which could include the complete loss of the asset's value.

### 13. Community and Narrative

As the crypto-asset has no intrinsic value, all trading activity is based on the intended market value is heavily dependent on its community.

### 14. Interest Rate Change

Historically, changes in interest, foreign exchange rates, and increases in volatility have increased credit and market risks and may also affect the value of the crypto-asset. Although historic data does not predict the future, potential investors should be aware that general movements in local and other factors may affect the market, and this could also affect market sentiment and, therefore most likely also the price of the crypto-asset.

### 15. Taxation

The taxation regime that applies to the trading of the crypto-asset by individual holders or legal entities will depend on the holder's jurisdiction. It is the holder's sole responsibility to comply with all applicable tax laws, including, but not limited to, the reporting and payment of income tax, wealth tax, or similar taxes arising in connection with the appreciation and depreciation of the crypto-asset.

### 16. Anti-Money Laundering/Counter-Terrorism Financing

It cannot be ruled out that crypto-asset wallet addresses interacting with the crypto-asset have been, or will be used for money laundering or terrorist financing purposes, or are identified with a person known to have committed such offenses.

### 17. Market Abuse

It is noteworthy that crypto-assets are potentially prone to increased market abuse risks, as the underlying infrastructure could be used to exploit arbitrage opportunities through schemes such as front-running, spoofing, pump-and-dump, and fraud across different systems, platforms, or geographic locations. This is especially true for crypto-assets with a low market capitalization and few trading venues, and potential investors should be aware that this could lead to a total loss of the funds invested in the crypto-asset.

#### 18. Timeline and Milestones

Critical project milestones could be delayed by technical, operational, or market challenges.

19. Legal ownership: Depending on jurisdiction, token holders may not have enforceable legal rights over their holdings, limiting avenues for recourse in disputes or cases of fraud.

20. Jurisdictional blocking: Access to exchanges, wallets, or interfaces may be restricted based on user location or regulatory measures, even if the token remains transferable on-chain.

21. Token concentration: A large proportion of tokens held by a few actors could allow price manipulation, governance dominance, or sudden sell-offs impacting market stability.

22. Ecosystem incentive misalignment: If validator, developer, or user rewards become unattractive or distorted, network security and participation could decline.

23. Governance deadlock: Poorly structured or fragmented governance processes may prevent timely decisions, creating delays or strategic paralysis.

24. Compliance misalignment: Features or delivery mechanisms may unintentionally conflict with evolving regulations, particularly regarding consumer protection or data privacy.

#### **I.4 Project implementation-related risks**

As this white paper relates to the "Admission to trading" of the crypto-asset, the implementation risk is referring to the risks on the Crypto Asset Service Providers side. These can be, but are not limited to, typical project management risks, such as key-personal-risks, timeline-risks, and technical implementation-risks.

## **I.5 Technology-related risks**

As this white paper relates to the "Admission to trading" of the crypto-asset, the technology-related risks mainly involve the DLT networks where the crypto asset is issued in.

### **1. Blockchain Dependency Risks**

Network Downtime: Potential outages or congestion on the involved blockchains could interrupt on-chain token transfers, trading, and other functions.

### **2. Smart Contract Risks**

Vulnerabilities: The smart contract governing the token could contain bugs or vulnerabilities that may be exploited, affecting token distribution or vesting schedules.

### **3. Wallet and Storage Risks**

Private Key Management: Token holders must securely manage their private keys and recovery phrases to prevent permanent loss of access to their tokens, which includes Trading-Venues, who are a prominent target for dedicated hacks.

Compatibility Issues: The tokens require compatible wallets for storage and transfer. Any incompatibility or technical issues with these wallets could impact token accessibility.

### **4. Network Security Risks**

Attack Risks: The blockchains may face threats such as denial-of-service (DoS) attacks or exploits targeting its consensus mechanism, which could compromise network integrity.

Centralization Concerns: Although claiming to be decentralized, the relatively smaller number of validators/concentration of stakes within the networks compared to other blockchains might pose centralization risks, potentially affecting network resilience.

5. Evolving Technology Risks: Technological Obsolescence: The fast pace of innovation in blockchain technology may make the used token standard appear less competitive or become outdated, potentially impacting the usability or adoption of the token.

6. Bridges: The dependency on multiple ecosystems can negatively impact investors. This asset bridge creates corresponding risks for investors, as this lock-in mechanism may not function properly for technical reasons or may be subject to attack. In that case, the supply may change immediately or the ownership rights to tokens may be changed.
7. Forking risk: Network upgrades may split the blockchain into separate versions, potentially creating duplicate tokens or incompatibility between different versions of the protocol.
8. Economic abstraction: Mechanisms such as gas relayers or wrapped tokens may allow users to bypass the native asset, reducing its direct demand and weakening its economic role.
9. Dust and spam attacks: Low-value transactions may flood the network, increasing ledger size, reducing efficiency, and exposing user addresses to tracking.
10. Frontend dependency: If users rely on centralised web interfaces or wallets, service outages or compromises could block access even if the blockchain itself continues to operate.

#### **I.6 Mitigation measures**

None.

## **Part J – Information on the sustainability indicators in relation to adverse impact on the climate and other environment-related adverse impacts**

### **J.1 Adverse impacts on climate and other environment-related adverse impacts**

#### **S.1 Name**

Crypto Risk Metrics GmbH

#### **S.2 Relevant legal entity identifier**

39120077M9TG001FE242

### **S.3 Name of the cryptoasset**

Mantle

### **S.4 Consensus Mechanism**

The crypto asset that is the subject of this white paper is available on multiple DLT networks. These include: Ethereum and Mantle. In general, when evaluating crypto assets, the total number of tokens issued across different networks must always be taken into account, as spillover effects can be adverse for investors.

The following applies to Ethereum:

The crypto-asset's Proof-of-Stake (PoS) consensus mechanism, introduced with The Merge in 2022, replaces mining with validator staking. Validators must stake at least 32 ETH every block a validator is randomly chosen to propose the next block. Once proposed the other validators verify the blocks integrity. The network operates on a slot and epoch system, where a new block is proposed every 12 seconds, and finalization occurs after two epochs (~12.8 minutes) using Casper-FFG. The Beacon Chain coordinates validators, while the fork-choice rule (LMD-GHOST) ensures the chain follows the heaviest accumulated validator votes. Validators earn rewards for proposing and verifying blocks, but face slashing for malicious behavior or inactivity. PoS aims to improve energy efficiency, security, and scalability, with future upgrades like Proto-Danksharding enhancing transaction efficiency.

The following applies to Mantle:

Mantle does not operate a native consensus layer. Instead, it posts transaction data to its data availability layer EigenDA and validity certificates to Ethereum, inheriting its security model. It uses optimistic rollups with fraud proofs to ensure correctness of off-chain execution and trustless settlement.

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

The crypto asset that is the subject of this white paper is available on multiple DLT networks. These include: Ethereum and Mantle. In general, when evaluating crypto

assets, the total number of tokens issued across different networks must always be taken into account, as spillover effects can be adverse for investors.

The following applies to Ethereum:

The crypto-asset's PoS system secures transactions through validator incentives and economic penalties. Validators stake at least 32 ETH and earn rewards for proposing blocks, attesting to valid ones, and participating in sync committees. Rewards are paid in newly issued ETH and transaction fees. Under EIP-1559, transaction fees consist of a base fee, which is burned to reduce supply, and an optional priority fee (tip) paid to validators. Validators face slashing if they act maliciously and incur penalties for inactivity. This system aims to increase security by aligning incentives while making the crypto-asset's fee structure more predictable and deflationary during high network activity.

The following applies to Mantle:

Participants in the Mantle ecosystem, such as sequencers and data availability providers, are incentivized through network fees. Thanks to the modular setup and off-chain execution, transaction fees are significantly reduced compared to Ethereum mainnet. To get crypto-assets in and out of Mantle, a special smart contract on Ethereum is used. Since there is no consensus mechanism on L2 an additional mechanism ensures that only existing funds can be withdrawn from L2. When a user wants to withdraw funds, that user needs to submit a withdrawal request on L1. If this request remains undisputed for a period of time the funds can be withdrawn. During this time period Mantle validators can dispute the claim, which will start a dispute resolution process. This process is designed with economic incentives for correct behavior of all participants.

## **S.6 Beginning of the period to which the disclosure relates**

2024-10-20

## **S.7 End of the period to which the disclosure relates**

2025-10-20

## **S.8 Energy consumption**

54556.16126 kWh/a

## **S.9 Energy consumption sources and methodologies**

The energy consumption of this asset is aggregated across multiple components: To determine the energy consumption of a token, the energy consumption of the network Ethereum and Mantle is calculated first. For the energy consumption of the token, a fraction of the energy consumption of the network is attributed to the token, which is determined based on the activity of the crypto-asset within the network. When calculating the energy consumption, the Functionally Fungible Group Digital Token Identifier (FFG DTI) is used - if available - to determine all implementations of the asset in scope. The mappings are updated regularly, based on data of the Digital Token Identifier Foundation. The information regarding the hardware used and the number of participants in the network is based on assumptions that are verified with best effort using empirical data. In general, participants are assumed to be largely economically rational. As a precautionary principle, we make assumptions on the conservative side when in doubt, i.e. making higher estimates for the adverse impacts.

## **S.10 Renewable energy consumption**

32.2255486008 %

## **S.11 Energy intensity**

0.00007 kWh

## **S.12 Scope 1 DLT GHG emissions – Controlled**

0.00000 tCO<sub>2</sub>e/a

## **S.13 Scope 2 DLT GHG emissions – Purchased**

18.15700 tCO<sub>2</sub>e/a

## **S.14 GHG intensity**

0.00002 kgCO<sub>2</sub>e

### **S.15 Key energy sources and methodologies**

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 Our World in Data, see citation. The intensity is calculated as the marginal energy cost wrt. one more transaction. Ember (2025); Energy Institute - Statistical Review of World Energy (2024) - with major processing by Our World in Data. "Share of electricity generated by renewables - Ember and Energy Institute" [dataset]. Ember, "Yearly Electricity Data Europe"; Ember, "Yearly Electricity Data"; Energy Institute, "Statistical Review of World Energy" [original data]. Retrieved from <https://ourworldindata.org/grapher/share-electricity-renewables>.

### **S.16 Key GHG sources and methodologies**

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 Our World in Data, see citation. The intensity is calculated as the marginal emission wrt. one more transaction. Ember (2025); Energy Institute - Statistical Review of World Energy (2024) - with major processing by Our World in Data. "Carbon intensity of electricity generation - Ember and Energy Institute" [dataset]. Ember, "Yearly Electricity Data Europe"; Ember, "Yearly Electricity Data"; Energy Institute, "Statistical Review of World Energy" [original data]. Retrieved from <https://ourworldindata.org/grapher/carbon-intensity-electricity> Licenced under CC BY 4.0.

