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  - Appendix ZM: Ecosystem Governance Details
  - Appendix ZN: Ecosystem Economics Details
  - Appendix ZO: Ecosystem Security Details
  - Appendix ZP: Ecosystem Integrations Details
  - Appendix ZQ: Ecosystem Applications Details
  - Appendix ZR: Ecosystem Services Details
  - Appendix ZS: Ecosystem Governance Details
  - Appendix ZT: Ecosystem Economics Details
  - Appendix ZU: Ecosystem Security Details
  - Appendix ZV: Ecosystem Integrations Details
  - Appendix ZW: Ecosystem Applications Details
  - Appendix ZX: Ecosystem Services Details
  - Appendix ZY: Ecosystem Governance Details
  - Appendix ZZ: Ecosystem Economics Details


# AdEx Protocol

## Intro

AdEx is an open, multi-chain ecosystem built on top of the Ethereum blockchain for secure and scalable tokenization of ad inventory and ad-related assets, including ad impressions, ad units, and ad campaigns. The ecosystem is designed to be fully decentralized, with its core functionality implemented through smart contracts and supported by a set of services and integrations that enable interoperability with other blockchains and external systems. The ecosystem is governed by the AdEx DAO, which manages the protocol's parameters, upgrades, and treasury, ensuring that stakeholders can participate in the decision-making process.

AdEx aims to provide a transparent and efficient marketplace for digital advertising, leveraging blockchain technology to enhance trust, security, and liquidity in the advertising ecosystem. The ecosystem supports various types of ad inventory, including traditional ad units, ad impressions, and ad-related assets, and provides tools and services for ad tokenization, trading, and management. The ecosystem is designed to be modular and extensible, allowing for the integration of new services and applications as the ecosystem evolves.

## Terms

- **Ecosystem**: The overall network of smart contracts, services, and applications that make up the AdEx protocol and its ecosystem.
- **Ecosystem Layer**: A specific layer or component of the ecosystem, such as the core smart contracts, services, or applications.
- **Ecosystem Governance**: The process and mechanisms for making decisions and proposing changes to the ecosystem, including the AdEx DAO and its governance tokens.
- **Ecosystem Economics**: The economic incentives and mechanisms that govern the ecosystem, including the tokenomics of AdEx and the fees and rewards for participants.
- **Ecosystem Security**: The measures and mechanisms that ensure the security and integrity of the ecosystem, including smart contract audits, bug bounties, and security services.
- **Ecosystem Integrations**: The connections and interoperability between the ecosystem and other blockchains and external systems, including bridges and APIs.
- **Ecosystem Applications**: The various applications and services that utilize the ecosystem, including ad marketplaces, ad tokenization platforms, and ad management tools.
- **Ecosystem Services**: The various services that support the ecosystem, including ad tokenization, trading, and management services.
- **Ecosystem Roadmap**: The planned development and upgrades for the ecosystem, including the roadmap for the AdEx protocol and its ecosystem.
- **Ecosystem Risks**: The potential risks and challenges that may affect the ecosystem, including technical, economic, and regulatory risks.

## Actors and roles

### Core Smart Contracts

Core smart contracts are the foundation of the ecosystem, providing the core functionality and logic for the ecosystem. These contracts are deployed on the Ethereum blockchain and are designed to be secure, decentralized, and upgradeable. The core smart contracts include the AdEx Protocol, AdEx DAO, and AdEx Staking contrac