Introduction

In the world of Ethereum blockchain transactions, it's important to verify the identity of the person signing the transactions. To meet Know Your Customer (KYC) requirements, we need a way to prove that the person behind an Ethereum account is who they claim to be. Our service provides a solution by allowing individuals to use their eID card to sign their Ethereum account, creating a verified link between their identity and their blockchain transactions. This ensures that third parties can trust the identity of the account holder, even when interacting through smart contracts on the Ethereum network.

Use Case: John the Freelancer

John is a freelance developer who often engages in projects with various companies. Recently, he started working with Acme Corp., a company that specializes in creating decentralized applications on the Ethereum blockchain. As part of his contract, John needs to sign a smart contract to receive his payments and other project-related transactions.

Acme Corp. has strict KYC requirements to ensure the authenticity of their collaborators. To meet these requirements, John uses Tydids that allows him to link his real-world identity to his Ethereum account using his eID card.

1. **Setup and Verification:**
   - John logs into Tydids and uses his eID card to digitally sign his Ethereum account. This process securely binds his verified personal identity to his Ethereum address.
   - The service generates a digital certificate that confirms John's identity and associates it with his Ethereum account.
2. **Signing the Smart Contract:**
   - John accesses the smart contract provided by Acme Corp. through their decentralized application.
   - Before signing the contract, the application prompts John to prove his identity using the digital certificate generated by the Tydids service.
   - John selects his verified Ethereum account and uses his eID card to sign the transaction. This action confirms his identity to Acme Corp.
3. **Transaction Execution:**
   - The smart contract on the Ethereum blockchain receives John’s signed transaction along with his identity verification.
   - Acme Corp.’s smart contract validates the digital certificate and confirms that the transaction is indeed from John.
   - Once verified, the smart contract executes the transaction, ensuring John receives his payment and any other agreed-upon benefits.

4. **Trust and Security:**
    - Acme Corp. is assured that the person signing the transaction is truly John, fulfilling their KYC requirements.
    - John can now seamlessly continue his work with Acme Corp., knowing his identity is securely verified on the blockchain.

By using this Tydids verification service, John and Acme Corp. can engage in secure, trusted transactions on the Ethereum blockchain, enabling efficient collaboration and compliance with KYC regulations.

Use Case: Alice sells CO2 savings

Alice is an environmentally conscious homeowner who has installed a rooftop solar PV system to generate electricity. By doing so, she reduces CO2 emissions, contributing to a cleaner environment. Alice has accumulated significant CO2 savings and wants to sell these savings to Acme Corp., a company with a Corporate Social Responsibility (CSR) directive to lower its Scope 2 emissions.

To facilitate this transaction and ensure that Acme Corp. remains audit-safe and compliant, a smart contract on one of the Ethereum based blockchain is used. This contract handles the "deal" between Alice and Acme Corp., ensuring transparency and anonymity while providing the necessary validation for Acme Corp.'s audits.

1. **Generating CO2 Savings:**
    - Alice’s rooftop solar PV system continuously generates electricity, reducing her reliance on grid power and saving CO2 emissions.
    - The total CO2 savings are recorded and verified through a trusted environmental monitoring service, which provides a digital certificate of the savings.
2. **Setting Up the Smart Contract:**
    - Acme Corp. posts an offer on an Ethereum blockchain to buy verified CO2 savings to meet their CSR goals.
    - Alice sees the offer and decides to sell her verified CO2 savings to Acme Corp.
    - Both Alice and Acme Corp. agree to the terms of the deal through a smart contract. The contract specifies the amount of CO2 savings, the price, and the verification requirements.
3. **Identity Verification:**
    - To ensure compliance and audit readiness, Alice uses her eID card to sign her Ethereum account. This verifies her identity without revealing it publicly on the blockchain.
    - Acme Corp. also uses its verified Ethereum account to sign the smart contract, ensuring both parties are authenticated without exposing their identities.
4. **Executing the Transaction:**

- The smart contract on the Ethereum blockchain executes the deal once Alice’s CO2 savings are verified.
- The digital certificate proving Alice’s CO2 savings is linked to the transaction, ensuring that Acme Corp. can later prove the source of their CO2 reductions.
- The agreed-upon payment is transferred from Acme Corp.’s Ethereum account to Alice’s Ethereum account.

5. **Transparency and Anonymity:**
   - The transaction details, such as the amount of CO2 savings and the payment, are recorded on the Ethereum blockchain, ensuring transparency.
   - However, the actual identities of Alice and Acme Corp. remain anonymous to the public. Only Alice and Acme Corp. know each other's real-world identities.
6. **Audit and Compliance:**
   - Acme Corp. can now use the verified CO2 savings to report lower Scope 2 emissions, fulfilling their CSR requirements.
   - During an audit, Acme Corp. can present two key documents to streamline the process:
     - The blockchain transaction record, which details the CO2 savings transaction.
     - A PDF document proving Alice's identity, linked to the digital certificate used in the transaction.
   - This simplified documentation makes the audit process more efficient, ensuring compliance with minimal paperwork.

By using this system, Alice can monetize her environmental contributions, and Acme Corp. can meet their emission reduction targets in a transparent, anonymous, and compliant manner, with streamlined audit processes.

Use Case: KYC Validation on an existing customer base

Acme Corp. is a global company with a diverse customer base. To comply with international regulations, Acme Corp. needs to ensure the strong eValidation of all their customers. Currently, every customer is assigned a unique customer number, but this alone is not sufficient for compliance.

To address this, Acme Corp. implements a new process to validate customer identities securely and efficiently.

1. **Customer Onboarding:**
   - Acme Corp. informs its customers about the new identity validation process.
   - Each customer is given a unique URL to initiate their eValidation. The URL contains the customer’s unique number, ensuring that the validation process is linked to the correct account.
2. **Initiating eValidation:**

- When a customer logs into their account on Acme Corp.’s website, the system automatically generates and displays a personalized eValidation link.
- For example, for a customer with the number 1337, the URL would be automatically generated as: `https://tydids.com/?return_to=https%3A%2F%2Facme.com%2Fvalidation%3FcustomerID%3D1337&key_1=customerID&value_1=1337`.
- The customer simply needs to click on the provided URL without needing to manually replace any part of it.

3. **Validation Process:**
   - The customer clicks on the provided URL and is redirected to the eValidation service of tydids.
   - At `tydids.com`, the customer undergoes an identity verification process, in form of a eID verification and signing.
4. **Completion of eValidation:**
   - Once the eValidation process is completed successfully, the customer is redirected back to Acme Corp.'s validation endpoint.
   - The URL for the redirection will look like this: `https://acme.com/validation?customerID=1337&validationID=abc123`, where `abc123` is the unique validation ID generated during the eValidation process.
5. **Processing the Validation at Acme Corp.:**
   - Acme Corp.’s system receives the validation ID along with the customer ID.
   - Acme Corp. uses the validation ID to retrieve the validation results from `tydids.com`, ensuring that the customer’s identity has been verified.
   - The customer’s account is then updated to reflect the successful validation, ensuring compliance with regulatory requirements.
6. **Benefits and Compliance:**
   - This process ensures that Acme Corp. has a robust and reliable method for verifying the identities of its global customer base.
   - The use of a unique customer number and validation ID ensures that the process is secure and that each customer’s identity is accurately verified.
   - During an audit, Acme Corp. can present the verifications to streamline the process:
     - A PDF document proving the customer’s identity, linked to the digital certificate used in the transaction.
     - This simplified documentation makes the audit process more efficient, ensuring compliance with minimal paperwork.

By implementing this eValidation process, Acme Corp. can efficiently and securely verify the identities of their worldwide customers, meeting compliance requirements and enhancing trust in their customer database.

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