

Accountable Attribute-based Authentication with Fine-Grained Access Control and its Application to Crowdsourcing

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Problems & Ideas

- Problems of previous anonymous authentication schemes with access control
 - traceability is always performed by the trusted authority
 - anonymity, access control and public traceability cannot be achieved simultaneously
- Ideas: Accountable attribute-based authentication with fine-grained access control
 - Achieve public accountability without the help of any authority when a malicious user attempts to authenticate twice
 - Design the authentication mechanism ensuring anonymity, access control, linking and tracing at the same time

Main Contributions

- An accountable attribute-based authentication with fine-grained access control is given
- We formalize the security requirements, then give a generic construction and prove the security
- We propose a new crowdsourcing scheme on blockchain