CRII: SaTC: RUI: Towards Trustworthy and Accountable IoT Data Marketplaces
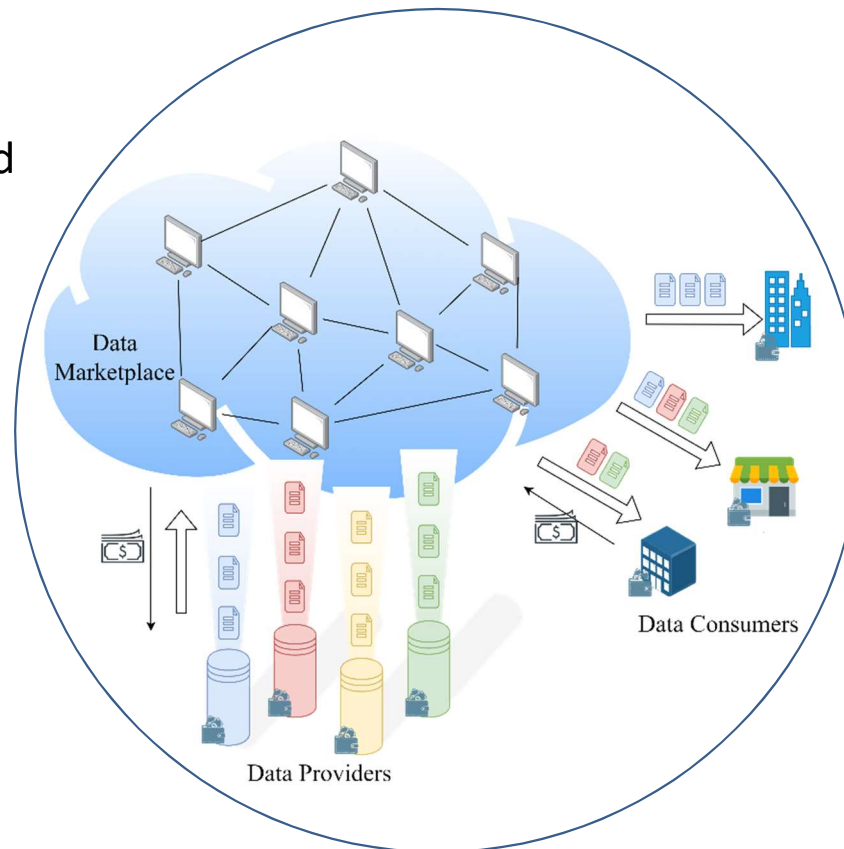
UNIVERSITY OF CENTRAL ARKANSAS

Challenge:

- Absence of a central marketplace operator
- Lack of mutual trust between data providers and consumers
- Post-trading re-selling or data leakage

Solution:

- Novel Fair exchange protocol
- Novel Zero-Knowledge Contingent Payment protocol
- Post-trading accountability via novel combination of oblivious transfer and zero-knowledge proofs

Data Marketplace

Data Providers

Data Consumers

Scientific Impact:

- Improve the trustworthiness of trustless environments by trusting the protocols not the entities

Broader Impact and Broader Participation:

- New opportunities in various industries by facilitating secure and trustworthy data trading.
- TTP: revolutionize data marketplaces.
- Training first-time undergraduate and graduate researchers
- New high school cybersecurity curriculum module on Applied Cryptography

Award #: 2153464

Institution: University of Central Arkansas

Period: 07/01/2022 – 06/30/2024