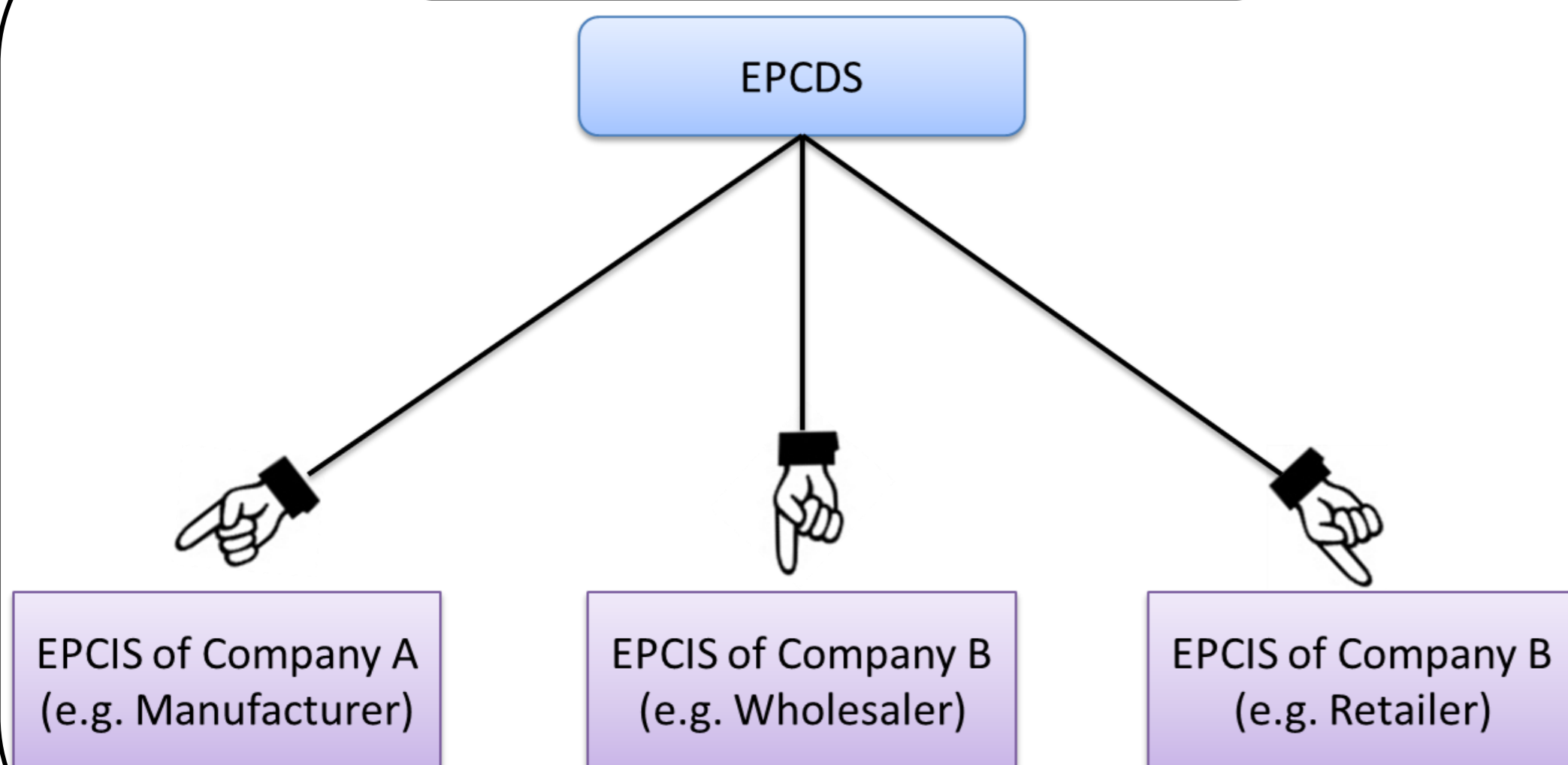


EPC DISCOVERY SERVICES



CENTRAL CONCERNS & QUESTIONS

In recent years, the Internet of Things (IOT) has drawn considerable attention from the industrial and research communities. Due to the vast amount of data generated through IOT devices and users, there is an urgent need for an effective search engine to help us make sense of this massive amount of data.

EMERGING IDEAS & INITIATIVES

Our initiative is to develop a secure and efficient search engine based on EPC Discovery Services (EPCDS) for EPCglobal network, which is an integral part of IOT and a standard platform for sharing RFID information among supply chain parties.

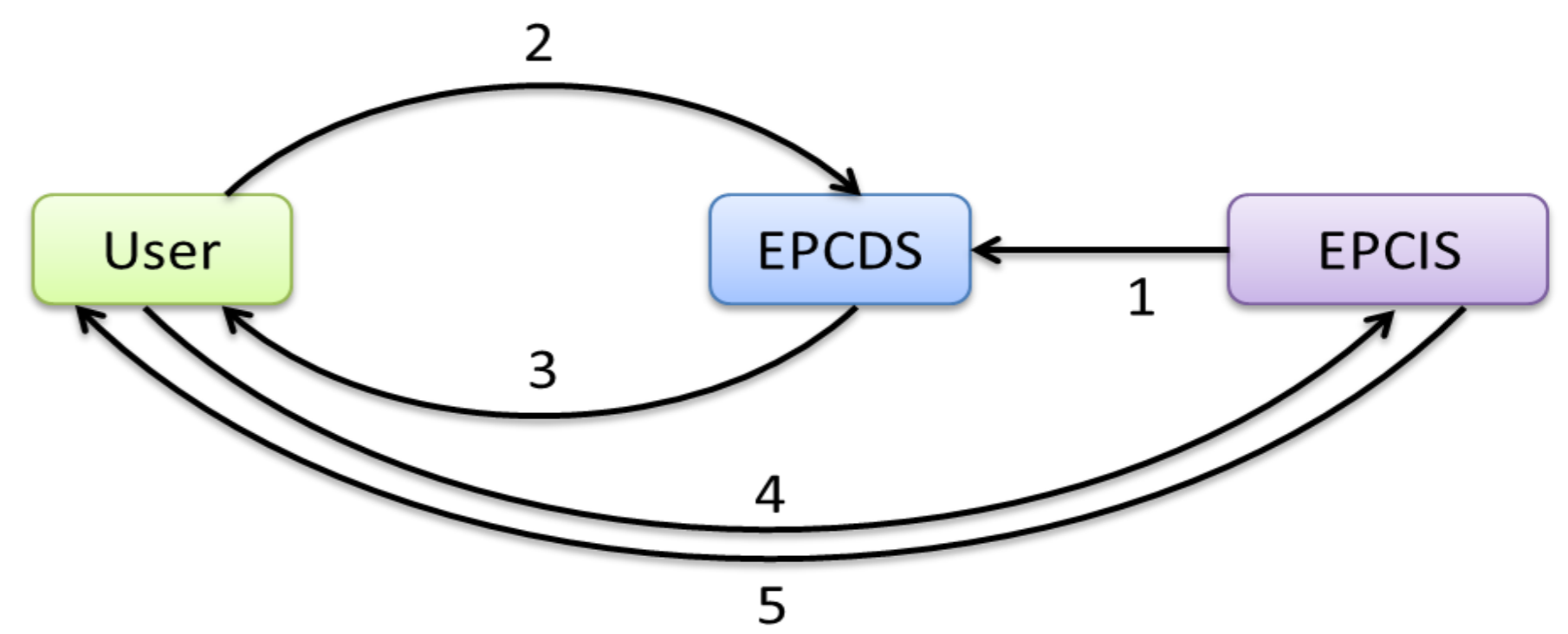
RESEARCH HIGHLIGHTS

- A comparative study is conducted on various EPC discovery service models, including Directory Service Model, Query Relay Model and Aggregating Discovery Service Model (ADS), based on non-functional features such as data ownership, confidentiality, business relationship independence, availability, reliability, implementation complexity, visibility, and scalability.
- An extended attribute-based access control model is proposed and implemented such that information belonging to different companies in EPC discovery services can be protected using different policies.

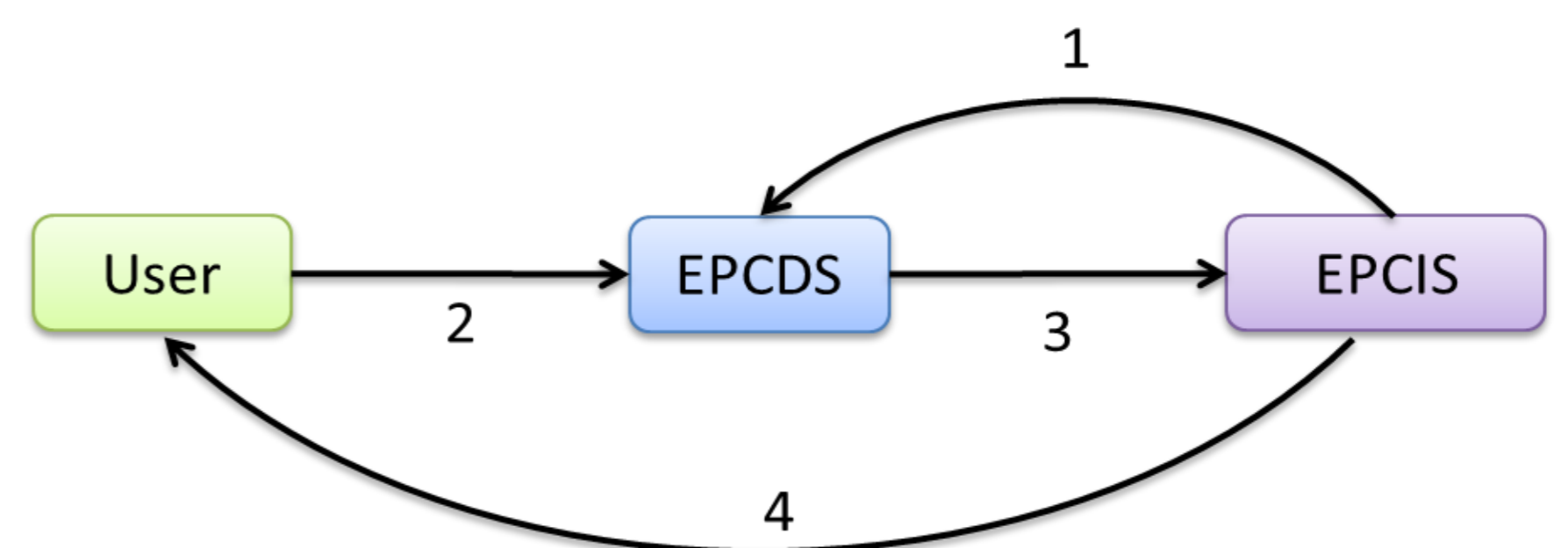
Funding and People

- **FUNDING:** A Security Framework for EPCglobal Network. Public Sector Funding (PSF), A*STAR SERC, Aug 2009-Jan 2012.
- **FACULTY / RESEARCH STUDENTS / RESEARCH STAFF:** Yingjiu Li, Robert Deng, Jie Shi, Divyan M. Konidala, Raghuvanshi Kailash, Darren Sim, Su Mon Kywe, Kevin Chiew
- **EXTERNAL COLLABORATORS:** Teyan Li, Wei He, Eng Wah Lee

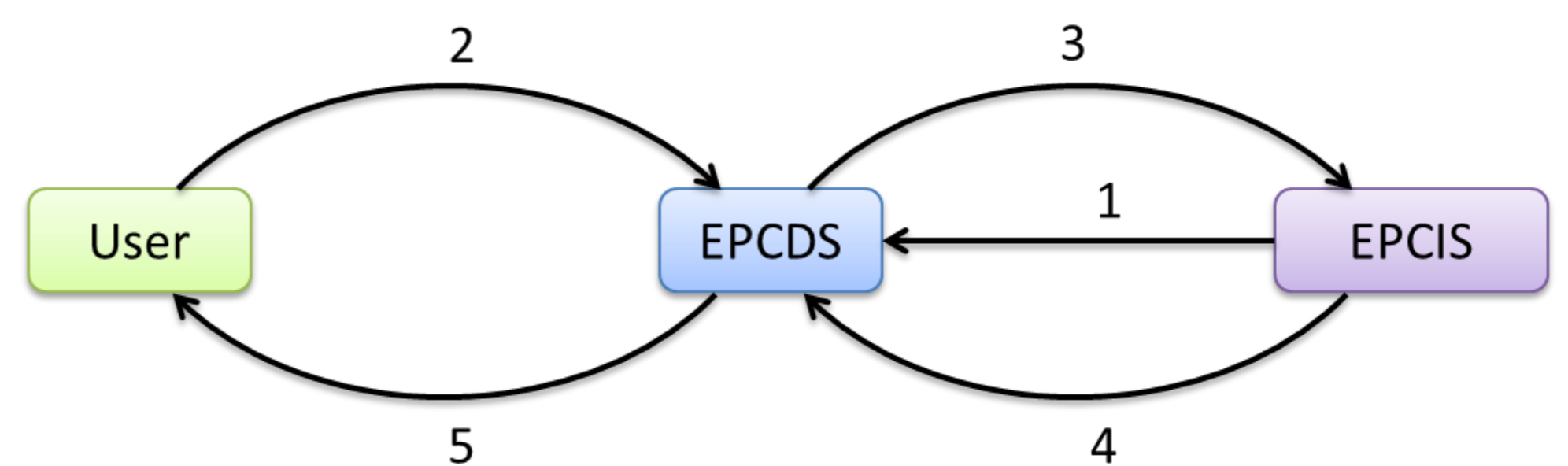
EPC DISCOVERY SERVICE MODELS



Directory Service Model



Query Relay Model



Aggregating Discovery Service Model

SELECTED PUBLICATIONS

1. Jie Shi, Darren Sim, Yingjiu Li, Robert Deng: SecDS: A Secure EPC Discovery Services System in EPCglobal Network (short paper). Accepted by [2nd ACM Conference on Data and Application Security and Privacy \(CODASPY\)](#), San Antonio, TX, USA, February 7-9, 2012.
2. Su Mon Kywe, Jie Shi, Yingjiu Li, Raghuvanshi Kailash: Evaluation of Different Electronic Product Code Discovery Service Models. Accepted by [Advances in Internet of Things \(AIT\)](#), Scientific Research Publishing, 2012.
3. Wei He, Yingjiu Li, Kevin Chiew, Teyan Li, Eng Wah Lee: [A Solution with Security Concern for RFID-Based Track and Trace Services in EPCglobal-Enabled Supply Chains](#). Book chapter in *Designing and Deploying RFID Applications*, edited by Cristina Turcu, Intech, ISBN 978-953-307-265-4, June 2011.