CERIAS

The Center for Education and Research in Information Assurance and Security

Blockhub: Blockchain-based Data Communication System with Leakage Prevention and Detection

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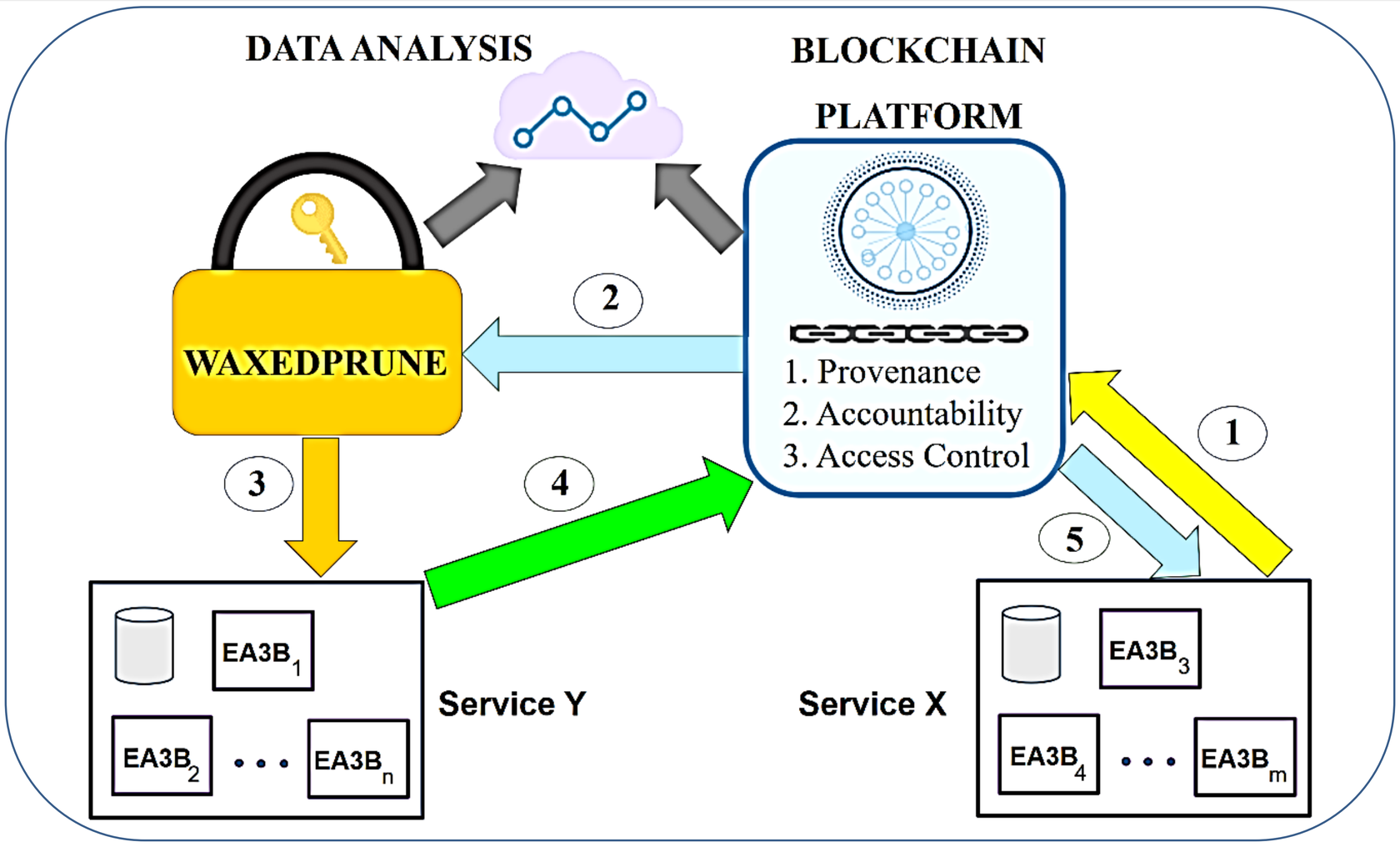


OBJECTIVES

Provide data protection in transit and at rest in SOA with capabilities of:

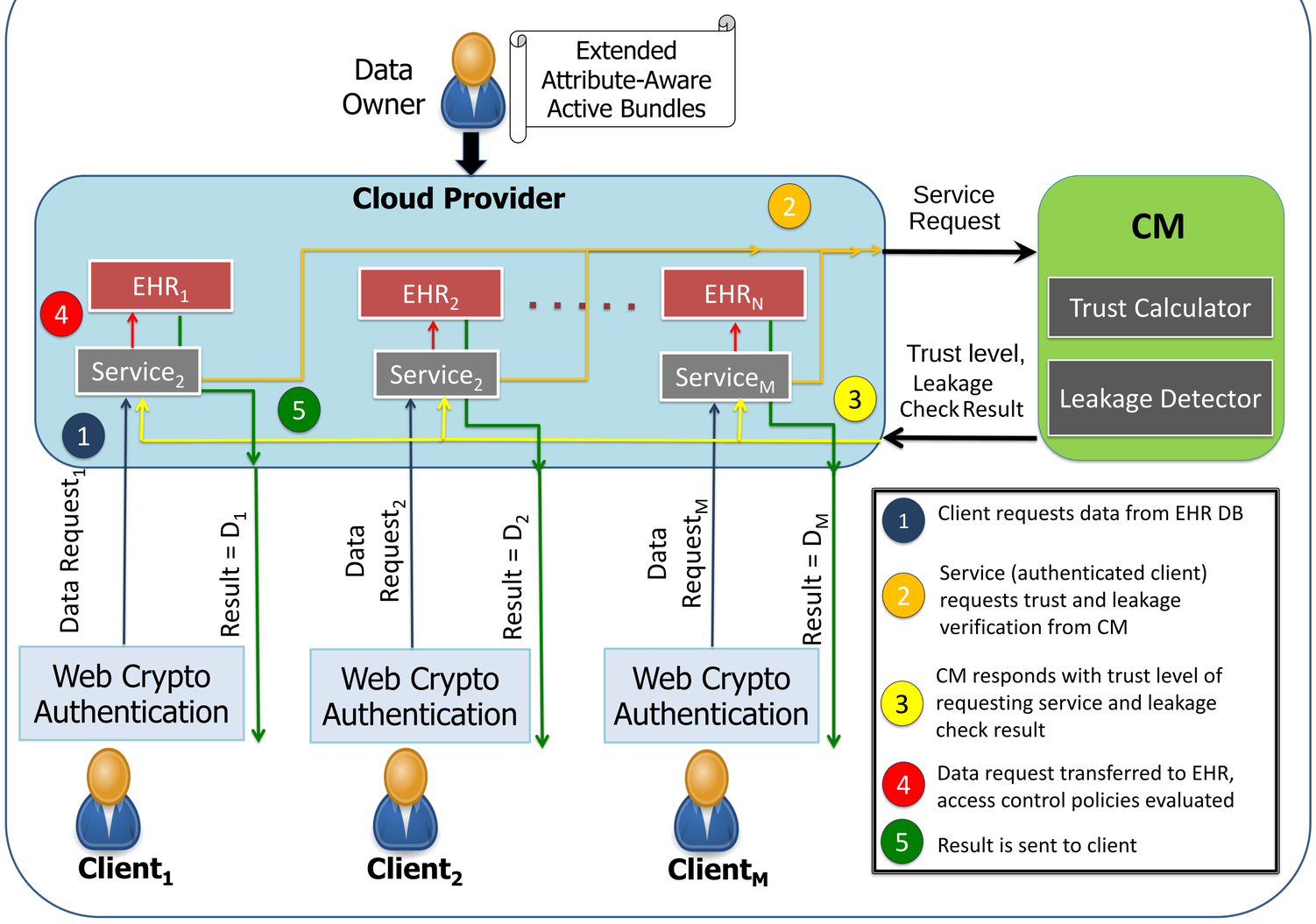
1) Data leakage detection/ prevention
2) Role-based and attribute-based access control
3) Search over encrypted data
4) Audit and control with integrity guarantees for collected provenance data

FEATURES

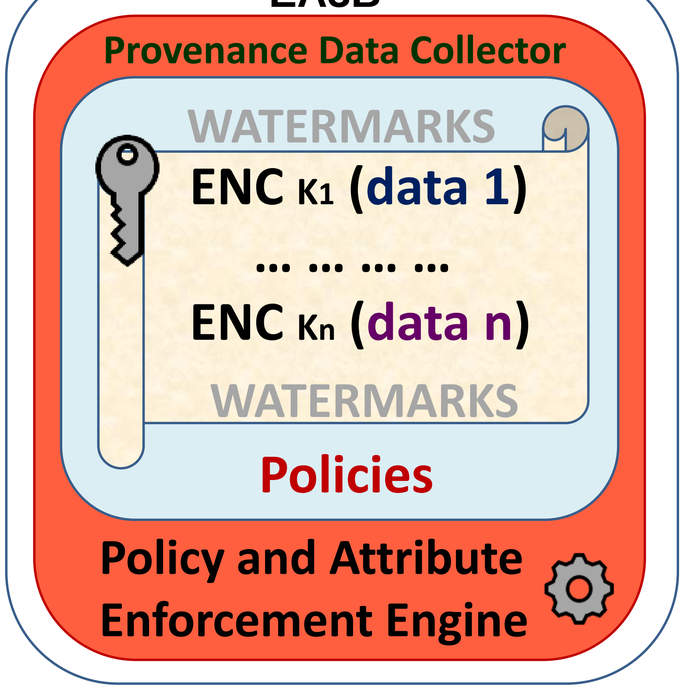
Use of Extended Attribute-Aware Active Bundles (EA3B) integrated into IBM Hyperledger Fabric platform

- Every data access, transfer or update is recorded in blockchain's distributed ledger

WAXEDPRUNE ARCHITECTURE



EA3B

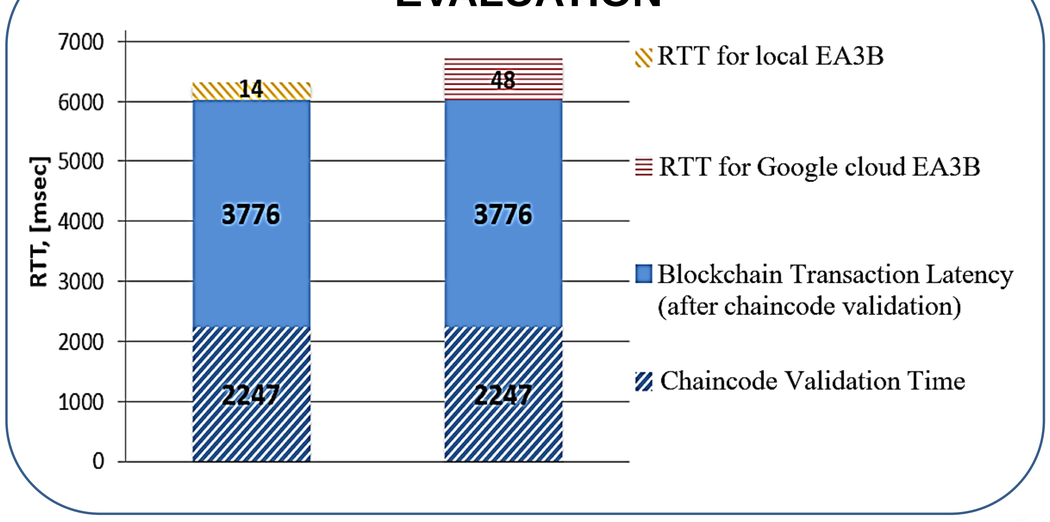


PUBLICATIONS

[1] D. Ulybyshev, M. Villarreal-Vasquez, B. Bhargava, G. Mani, S. Seaberg, P. Conoval, R. Pike, J. Kobes "Blockhub:Blockchain-based Software Development System for Untrusted Environments", IEEE CLOUD, San-Francisco, July 2018

[2] D. Ulybyshev, B. Bhargava, M. Villarreal-Vasquez, D. Steiner, L. Li, J. Kobes, H. Halpin, R. Ranchal, A. Alsalem, "Privacy-preserving Data Dissemination in Untrusted Cloud", IEEE Cloud 2017

EVALUATION



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