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ITSVIL
INGEGNERIA INFORMATICA

An innovative blockchain-based system for human resources digitalization with traceable relationship management

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Summary

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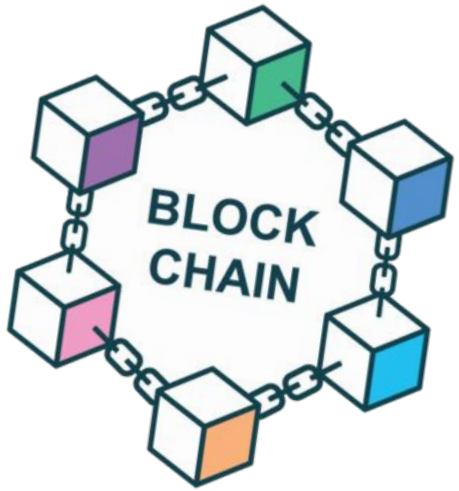
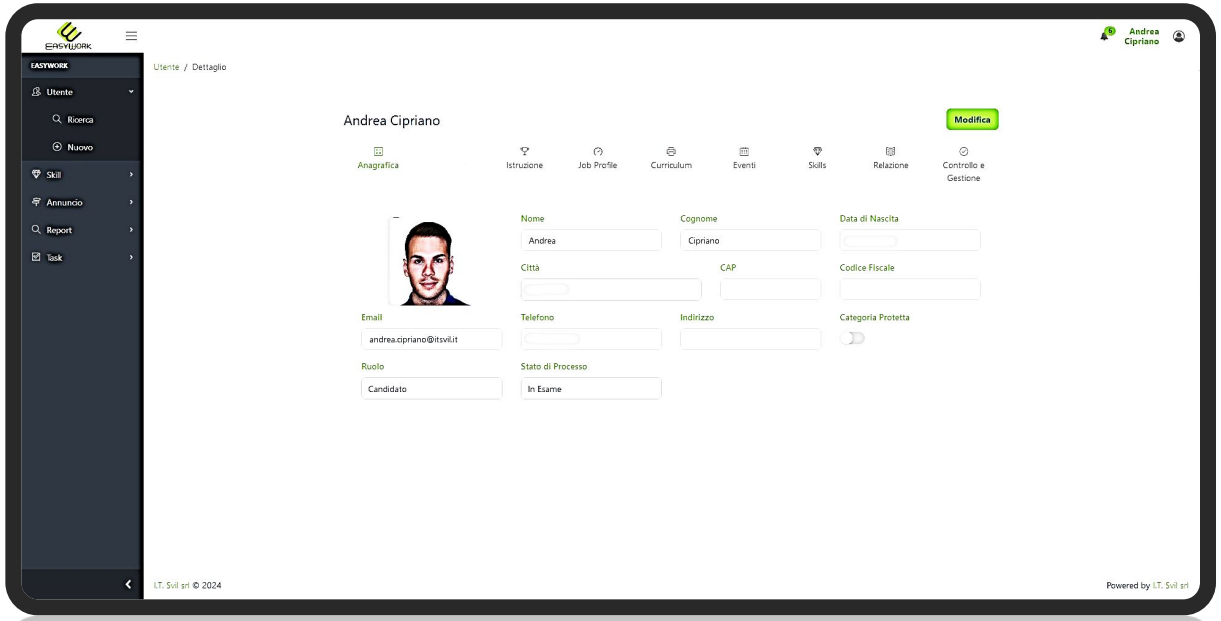
Introduction

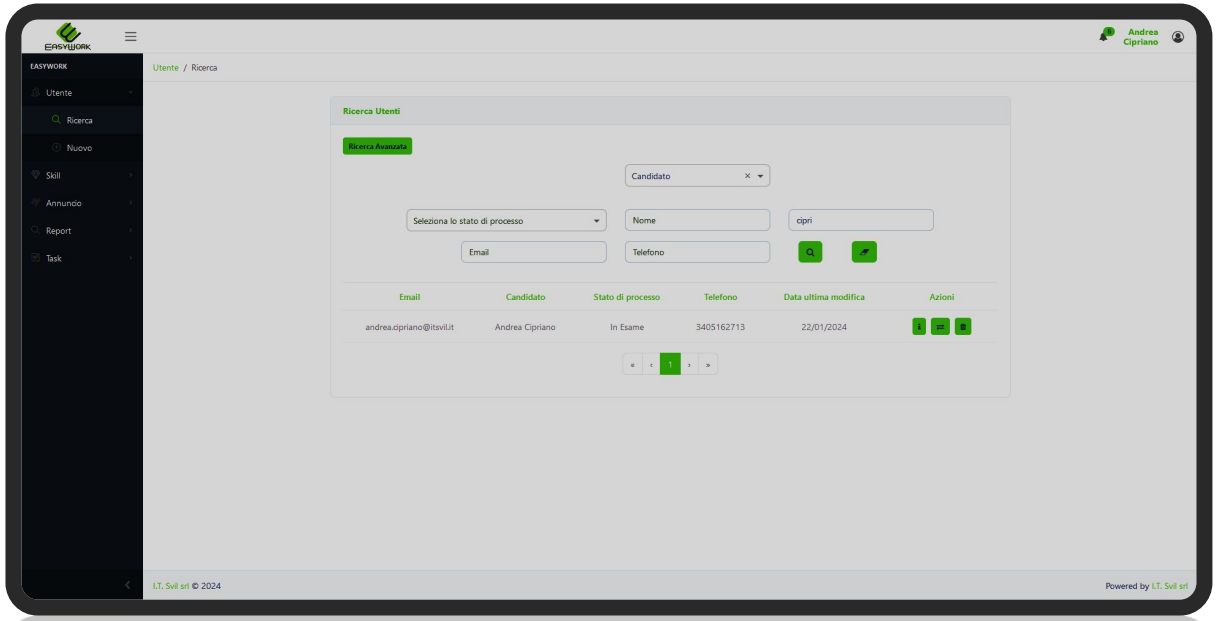
Context Analysis



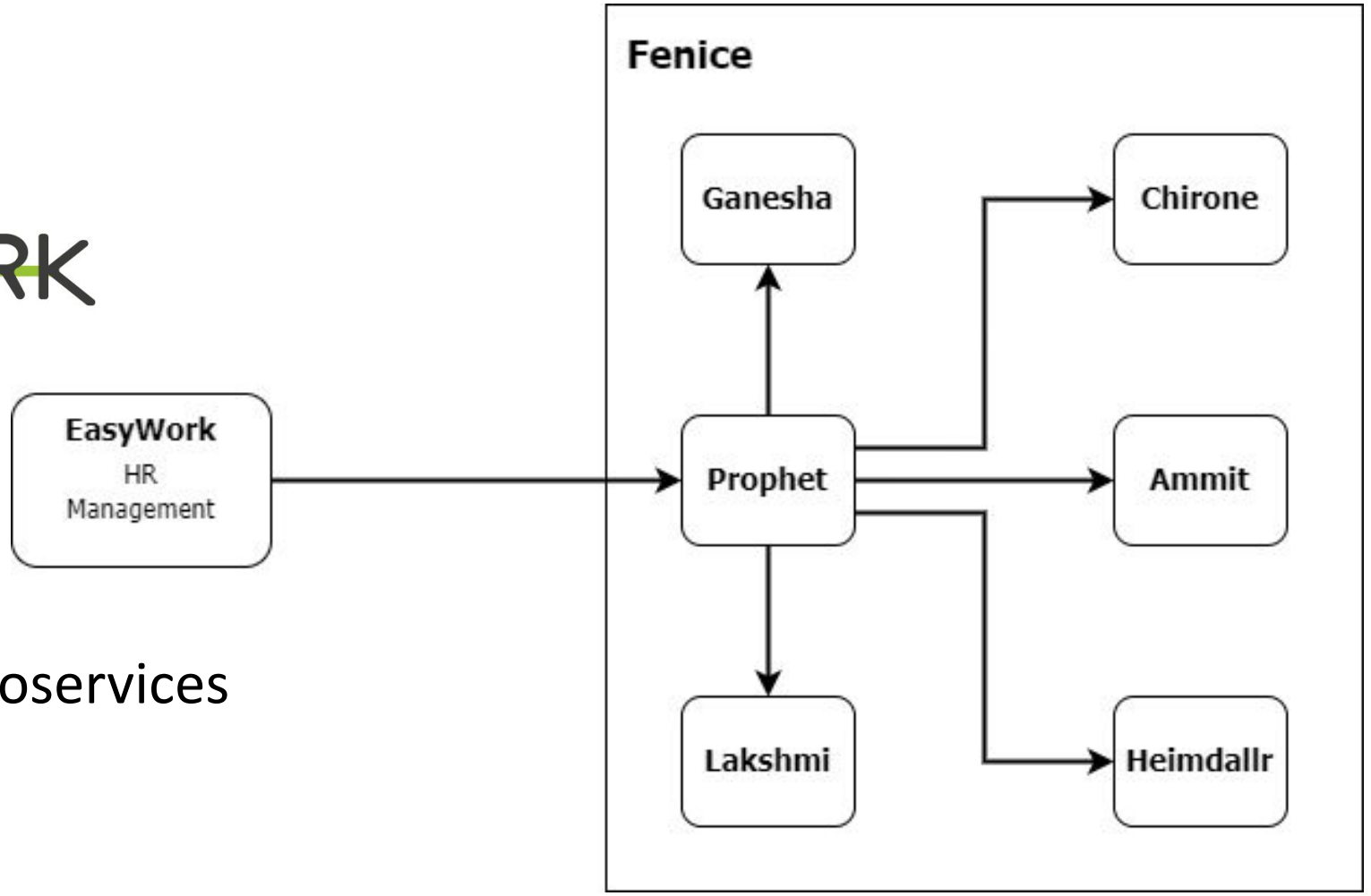
Easywork

Owned by ITSVIL srl, it allows the begin of cycle from the new candidates' hiring to their employment, managing personal information, task processing and so on.





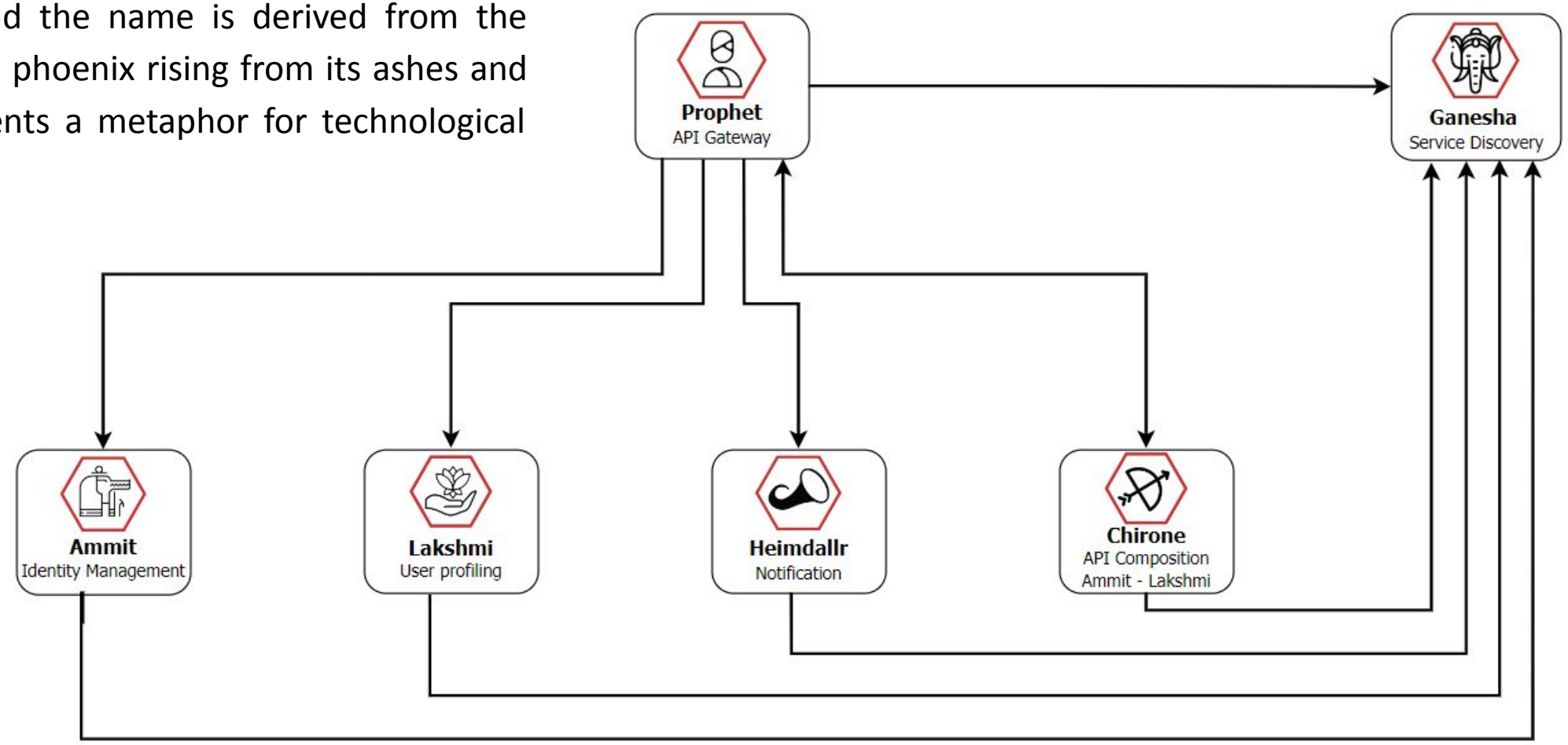
Easywork



It uses **Fenice** microservices architecture.

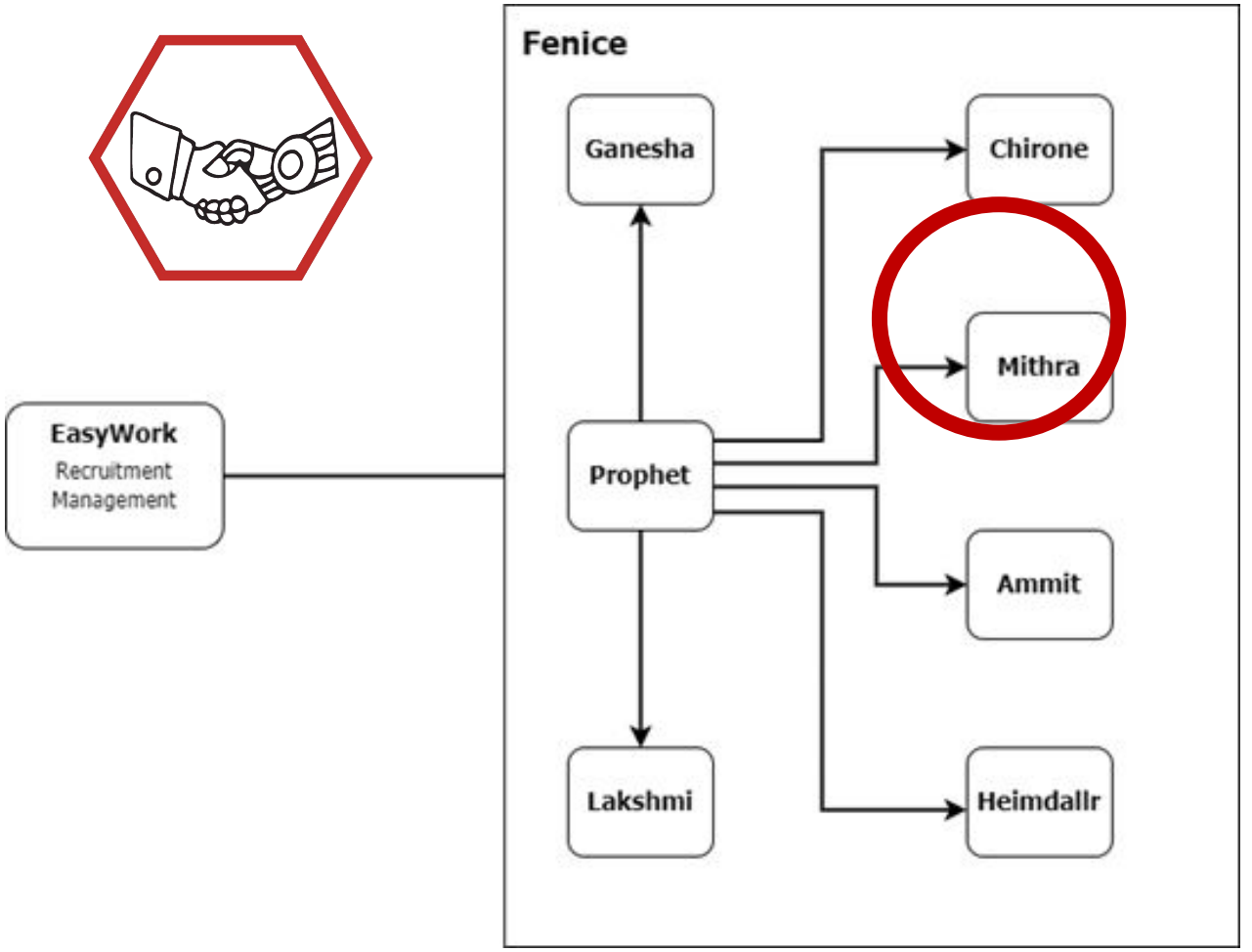
Fenice Architecture

The architecture of Fenice is microservices oriented and the name is derived from the myth of the phoenix rising from its ashes and this represents a metaphor for technological rebirth.



Mithra Microservice

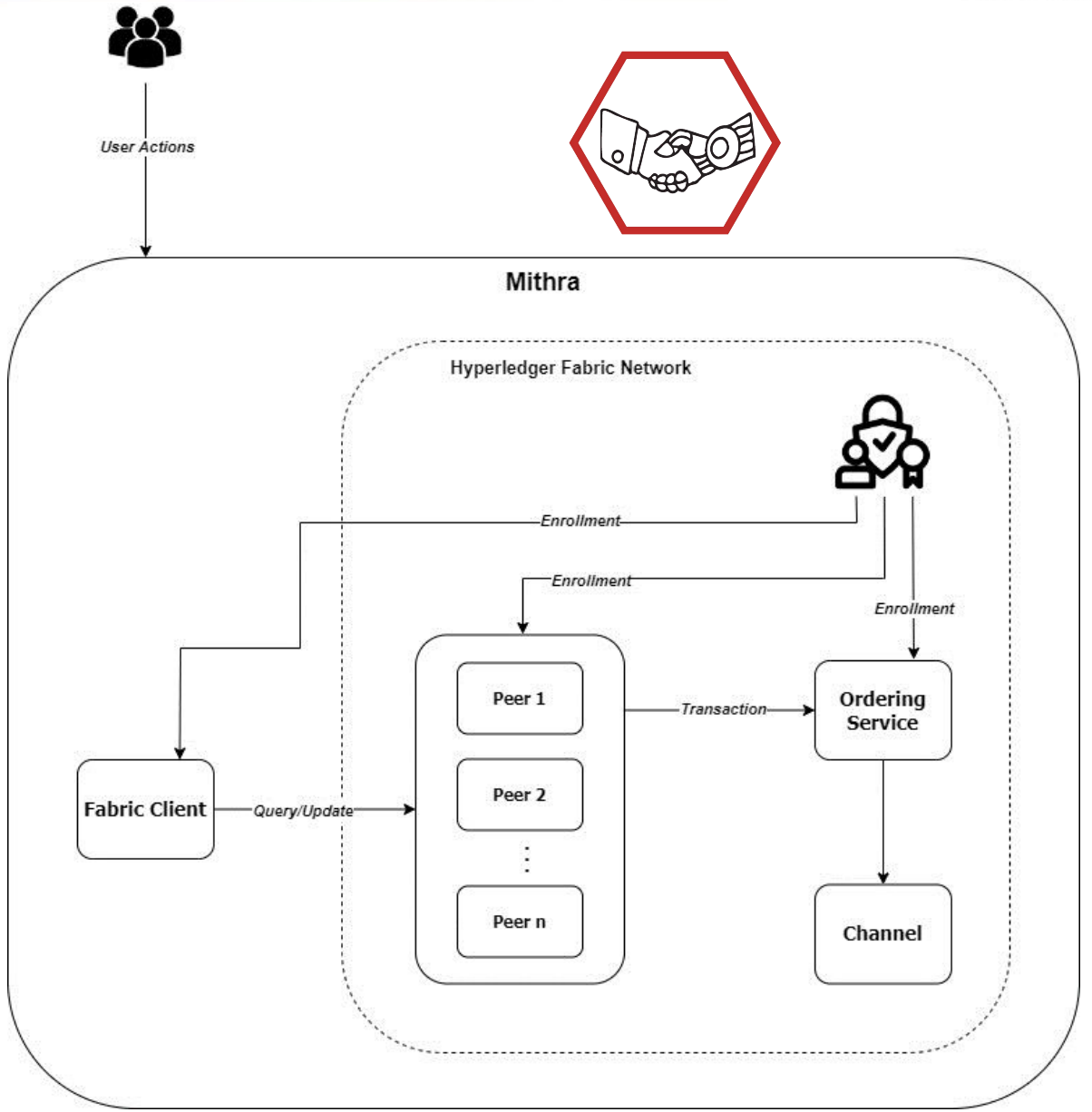
It is responsible for managing the interactions between the users, the smart contract and the blockchain. Additionally, it provides functionality for contract workflow management, contract creation, digital signature, and contract status visualization.



Mithra Microservice

- **Hyperledger Fabric** technology.
- **Bouncy Castle** for cryptographic libraries.

The blockchain executes the signature verification logic within the smart contract and returns a response to the microservice.



Application

1. The CEO initiates the contract creation process on the blockchain system and the contract is generated in a digital form and stored on the blockchain.

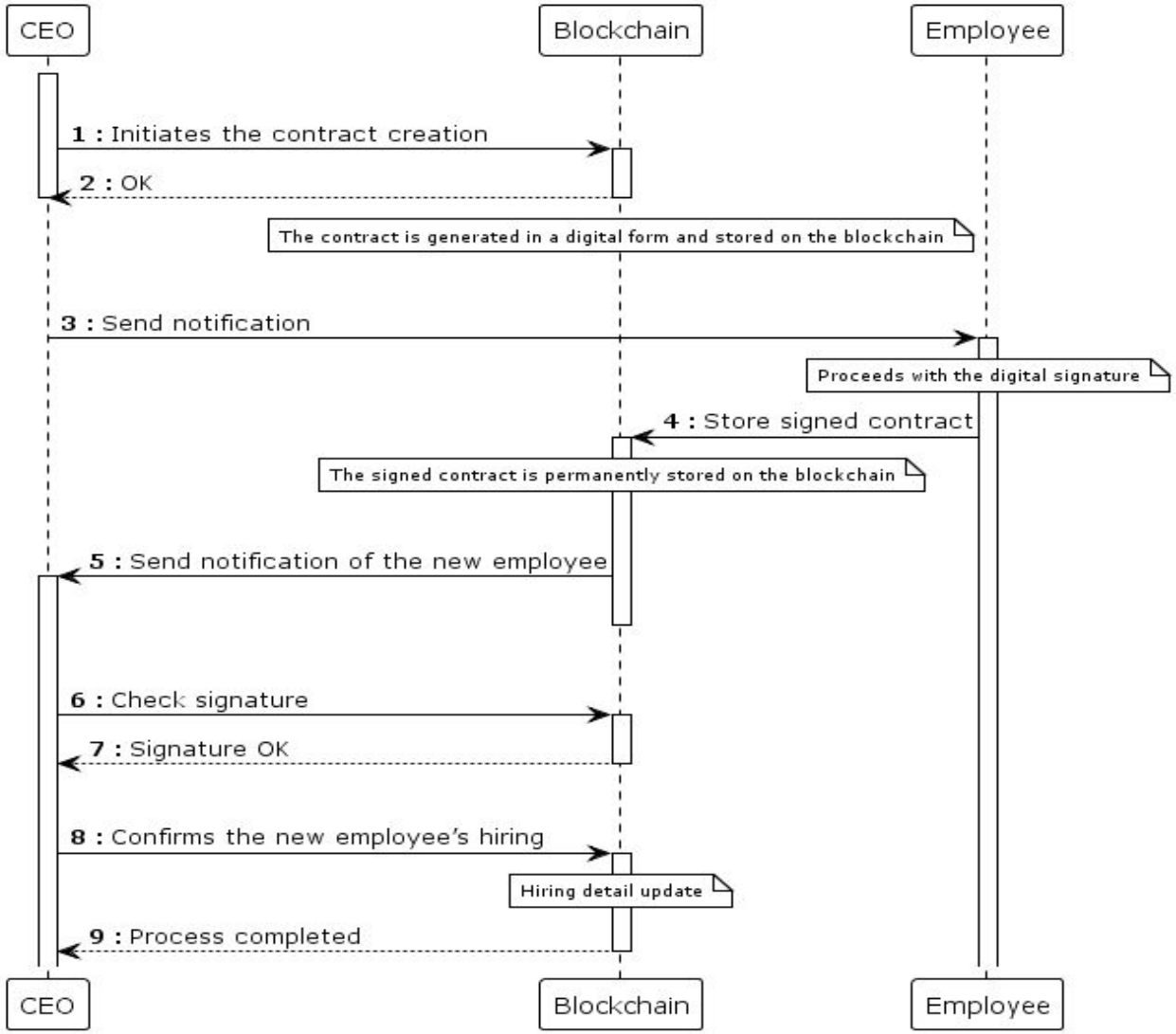
2. CEO sends a notification to the new employee, providing the contract address and signing instructions.

3. The new employee proceeds with the digital signature, which is encrypted and added to the contract on the blockchain.

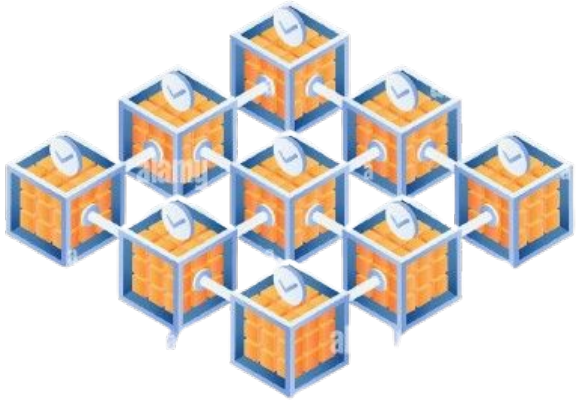
4. The signed contract is permanently stored on the blockchain

5. Once the signature is verified, the CEO officially confirms the new employee's hiring.

6. Then the CEO receives the notification of the new employee's digital signature.



Results and Discussion



Employment lifecycle is securely managed on blockchain

Conclusion and Future Improvements

We have presented a novel architecture to assist the HR Department in new employment activity, using the power of smart contracts to simplify the recruitment and relationship management activity and to make the performance of the employment relationship traceable in all its phases. The solution as designed is well-ready to be applied not only for ITSvil but in different business contexts. In this blockchain network workflow, the contract is generated, digitally signed, and securely stored on the blockchain, ensuring transparency, immutability, and information security.

As future improvements, the Mithra architecture's flexibility allows the management of employee payments and optimizing work teams based on skills and workload. This adaptability positions the system as a scalable solution for evolving HR management needs.

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ANY
QUESTIONS?