Project Profile

SAIP

Bringing blockchain and AI to the agrifood supply chain

The AI Call 2021 project SAIP (AI For AgriFood Supply Chain) will embed blockchain and AI in the agrifood supply chain, facilitating the acquisition of information about the origin and procurement process of food products. This can improve the supply chain by guaranteeing certified farmers, reliable food and safe product supply.

Addressing the challenge
Globalisation, COVID-19 and intense market competition have made food supply chains longer and more complex, resulting in issues such as inefficiency and a lack of food traceability, safety and quality. In combination with the growing global population, this presents risks to society, health and the economy. However, traditional point-to-point communication and limited transparency between partners have resulted in an absence of trust, which is needed to create more resilient supply chains.

Proposed solutions
By applying blockchain to the supply chain, SAIP will enable the documentation of every stage of a product, giving an autonomous structure to the supply chain and minimising human errors. This will provide a reliable means to trace transactions between anonymous participants that receive invite-only blockchain access, allowing each partner to control the data shared with those on the network. A central repository for agricultural decision-making support and an AI-based tool for raw data analysis will also be created, using a cloud-based data warehouse, data mart, data integration processes and data modelling/validation to provide a more dynamic customer experience in which feedback is used to modify services in real time. This can empower suppliers by providing an advanced warning infrastructure for delayed orders, including cycle time estimates to predict the probability of events such as order

confirmation or delivery. As a result, SAIP offers both a unique supply chain management solution and informed decision-making process. Different cases will also be modelled to quantify the impact of blockchain and digitisation on the development of a sustainable supply chain.

^ SAIP offers a unique supply chain management solution and informed decision-making process.

Projected results and impact
SAIP aims to fill a notable gap: no combination of AI and blockchain has ever been applied commercially to agrifood supply chain planning and management. The elimination of blind spots in supply chain networks offers a myriad of possible benefits to suppliers, including more responsive, efficient operations and scalability, better price formation due to a lack of information asymmetries, lower transaction costs

and the removal of intermediaries via smart contracts. From the perspective of consumers and regulators, meanwhile, the blockchain enables access to reliable information about how food is produced and transacted, removing concerns about safety, quality and environmental friendliness. The corresponding growth in consumer trust will be amplified by the difficulty for fraudsters and suppliers of low-quality products to remain in the market. Providers of legitimate, high-quality products will therefore achieve greater competitiveness as the global market for blockchain in agriculture and

food supply chains continues to explode to around USD 948 million by 2025 at a compound annual growth rate of 48.1%.

Project partners

Luxembourg

GOPA
L U X E M B O U R G

Türkiye

KLC**Soft**

smartmind
DATA ANALYTICS SOLUTIONS

Austria

Beia
CONSULT INTERNATIONAL

Project funded by

LUXINNOVATION
#MakingInnovationHappen

TÜBİTAK

Project start
April 2023

Project leader
Osman Kaskati, Smartmind

Project website
https://itea4.org/project/saip.html

Project end
April 2025

Project email
tolga.kaskati@smartmind.com.tr

ITEA is the Eureka R&D&I Cluster on software innovation, enabling a large international community of large industry, SMEs, start-ups, academia and customer organisations, to collaborate in funded projects that turn innovative ideas into new businesses, jobs, economic growth and benefits for society. ITEA is part of the Eureka Clusters Programme (ECP).

https://itea4.org

ITEA4

∑ eureka