



DPP and Traceability concept for organic foods

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1st ICCS Digital Product Passport event

14th of November 2024, online



THEROS Key Facts



- 🌿 **Project Title:** An integrated toolbox for improved verification and prevention of adulterations and non-compliances in organic and geographical indications (GI) food supply chain
- 🌿 **Call identifier:** HORIZON-CL6-2022-FARM2FORK-01-04
- 🌿 **Topic:** “Innovative solutions to prevent adulteration of food bearing quality labels: focus on organic food and geographical indications”
- 🌿 **Duration:** 01.01.2023 - 31.12.2025 (36 months)
- 🌿 **Funding scheme:** IA – Innovation Action
- 🌿 **EU contribution:** EUR 3,999,961.00
- 🌿 **Coordinated by:** Institute of Communication and Computer Systems (ICCS), Greece

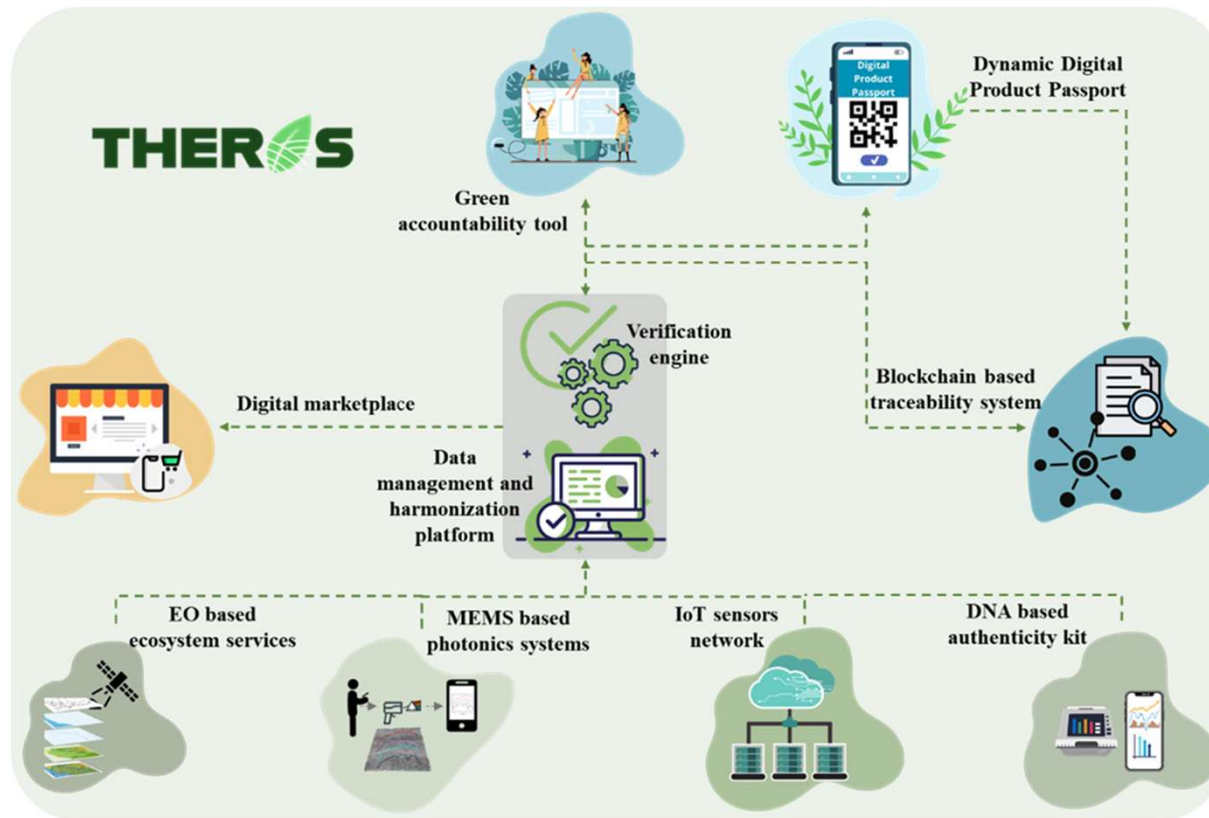


THEROS Consortium

- **4 Research Institutes & Technology Organizations** (ICCS, AUTH, JSI, CERTH)
- **4 Control and Certification Bodies / Authorities** (ELGO, OCS, KIWA, BIO-HELLAS)
- **5 Large Enterprises & SMEs** (NTT DATA, SINERGISE, EBOS, SEABILITY, WRLS)
- **1 Regulatory Council for a DPO** (MEXILLON)
- **2 Retailers / Wholesalers** (UNIVER, SUMAVA)
- **1 Cooperative and Producer Association** (BIO-NET)



THEROS Vision & Concept



THEROS aims to implement an integrated toolbox being capable to modernize the process of verifying organic and geographical indications food products and preventing adulterations and non-compliances, while demonstrating enhanced traceability, security and transparency in the supply chain, through the use of various technologies and innovations

that leverage *Earth Observation, photonics, internet of things (IoT), DNA metabarcoding, blockchain, digital interfaces and product passport, advance analytics, machine learning, artificial intelligence and business models.*

At the same time, efficient mechanisms will be employed in order to ensure interoperability with existing control systems, as well as improved accessibility and sharing of data through harmonized and standardized means, whilst also demonstrating their uptake by relevant stakeholders for improved decision-making.



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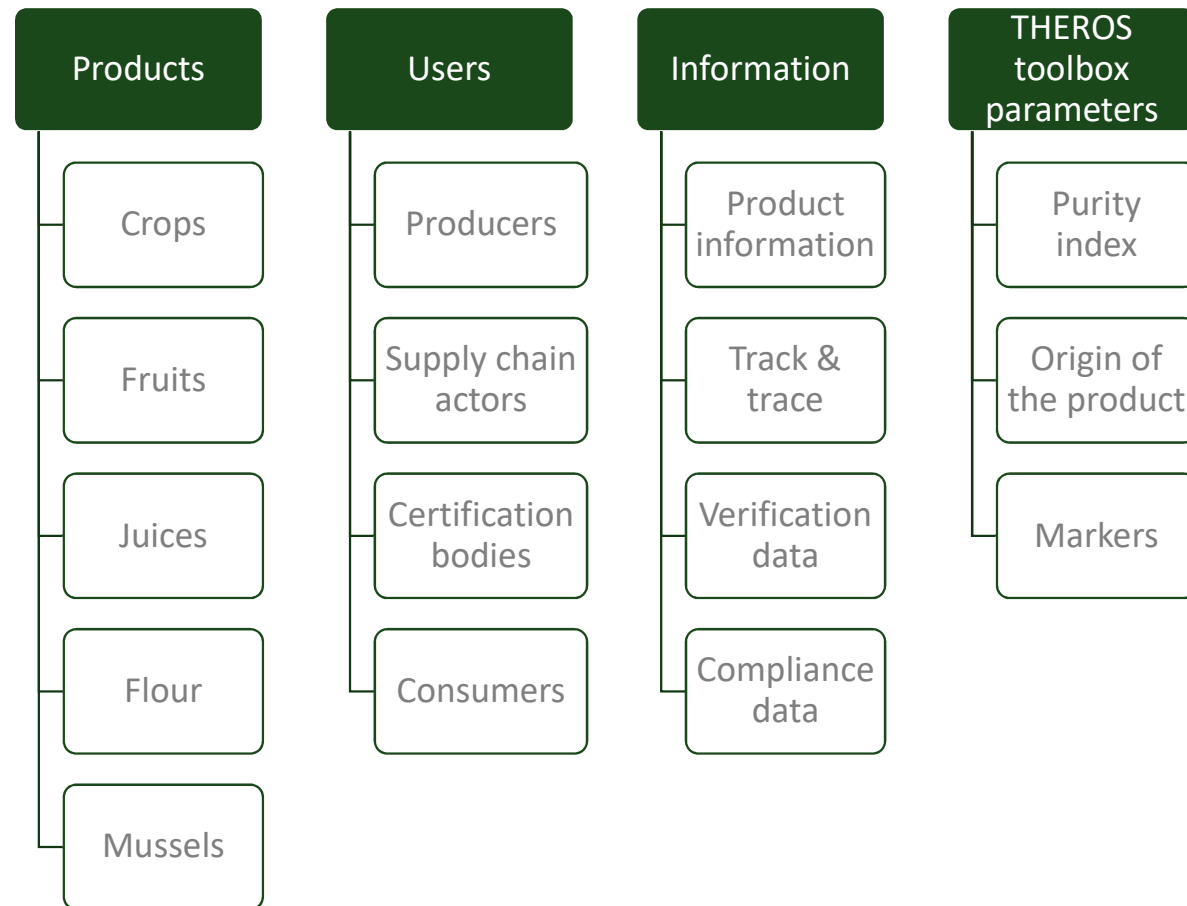
Why DPP for organic and GI food assets?



- Products, which are especially vulnerable to fraud and adulterations
- Products being more vulnerable to storage and transportation conditions
- To increase transparency and traceability
- To facilitate decision making - communication to consumer is especially important
- To increase confidence about food safety and environmental impact



THEROS DPP - factsheet



THEROS Traceability Platform (1/2)



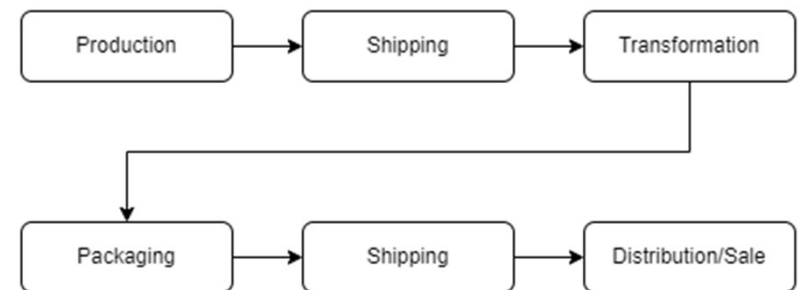
Traceability Platform - GS1 EPCIS Standard

THEROS Traceability platform uses GS1 EPCIS Standard.

EPCIS events are created in critical tracking points inside the value chain, answering the “what, where, when, and why” questions. For example:

- **What:** Oranges were harvested
- **Where:** An orange grove in Athens, Greece
- **When:** September 8, 2024
- **Why:** Oranges were ripe and ready for processing

Greek Pilot - Critical Tracking Events



THEROS Traceability Platform (2/2)



Traceability Platform - Blockchain

Traceability platform is built on top of a private blockchain network.

Storing EPCIS events in the blockchain has many advantages, including:

- **Enhanced Data Integrity:** Blockchain's immutability ensures events cannot be altered
- **Improved Transparency:** All stakeholders can access the same verified data, building trust
- **Strengthened Security:** Data is encrypted and decentralized, reducing reliance on a single point of failure and enhancing resilience against unauthorized access



THEROS Digital Product Passport



DPP Service (backend)

The Digital Product Passport (DPP) service collects data from the traceability platform (EPCIS events along the supply chain) to provide a comprehensive, digital profile of a product.

The data is organized into the following categories:

- Product Information
- Certifications
- Verifications
- Track & Trace
- Circularity & Sustainability – *under development*

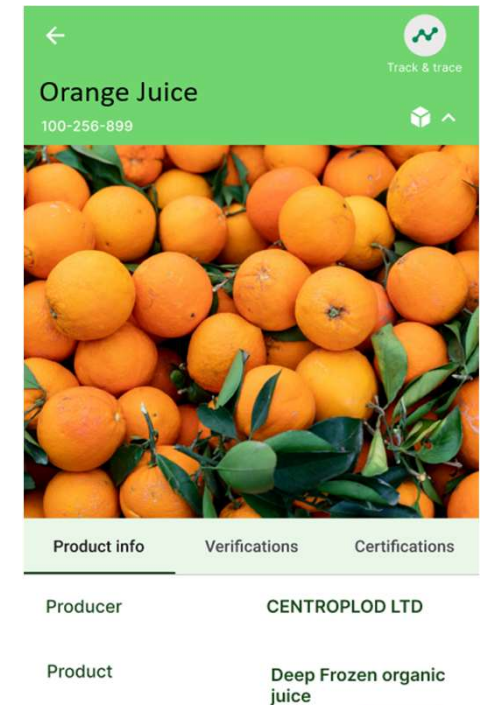


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DPP Mobile APP (frontend)

The DPP app enables consumers, businesses, and regulators to easily verify product history, certifications, and authenticity.

It promotes sustainability, transparency, and trust in the supply chain.



Encountered Challenges



- Evolution of the legislation (food products not yet in scope)
- Food sector DPP data selection and availability
- Stakeholders capacity building
- Heterogenous food sector production processes
- Difficulty in extracting product information through traceability events
- Data reliability



References



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Thank you for your attention!



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Funded by the
European Union

This project has received funding under grant agreement No 101083579. It is funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Research Executive Agency (REA). Neither the European Union nor the granting authority can be held responsible for them.