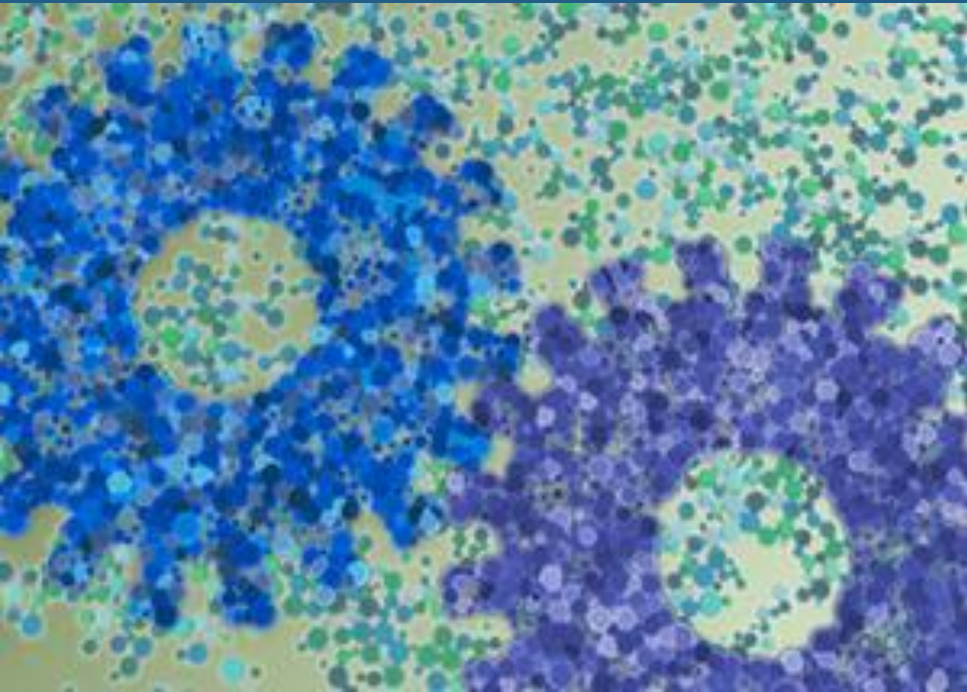


Ecosystem for Collaborative Manufacturing Processes – Intra- and Interfactory Integration and Automation



Marketplaces in the COMPOSITION platform

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Co-funded by the
European Union





Summary

- The COMPOSITION project
 - Goals
- COMPOSITION Marketplace
 - Concept Overview
 - Enabling technologies
 - Innovations
 - Impact and Re-usability
- Pilots
 - Scrap Metal Collection Scenario
 - Service Matching Scenario
- Demo



The COMPOSITION Project

- H2020 - FOF-11
 - Grant Agreement No 723145
- 12 partners
- 6 EU Countries
- 3 years
 - 09/2016 – 09/2019





Goals

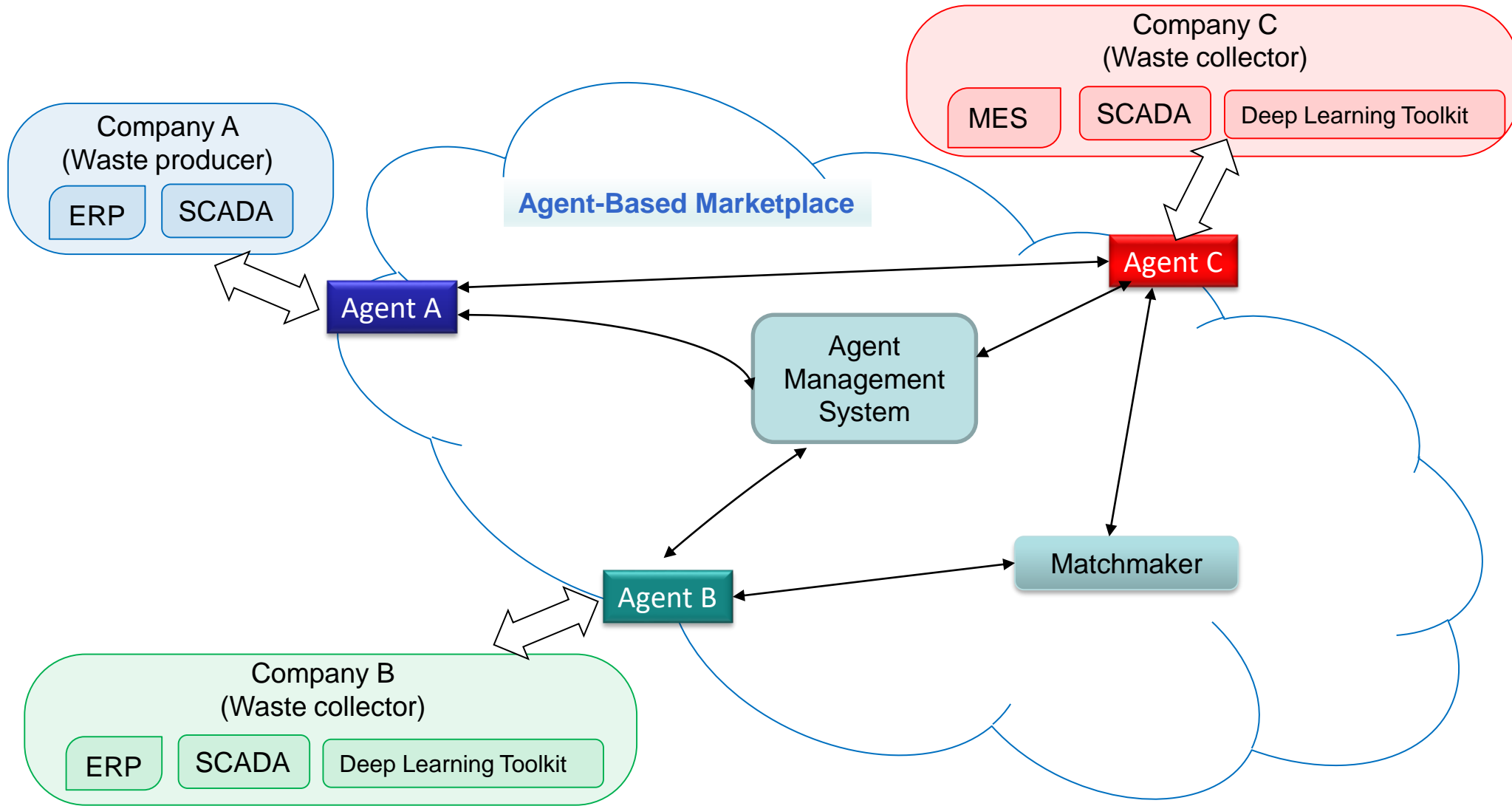
- Create a (semi-)automatic ecosystem, incorporating and inter-linking both the Supply and the Value Chains



COMPOSITION Marketplace



Concept Overview





Marketplace enabling technology

- **Multi Agent System**

- Agent Management System, White Pages Service
- Requester and Supplier Agents
- **COMPOSITION eXchange Language**

- **Security infrastructure**

- Access Control
- Channel encryption (TLS)
- RBAC for agents

- **Blockchain**

- Non-repudiation
- Audit trail
- Message Provenance & Trust
- Material traceability





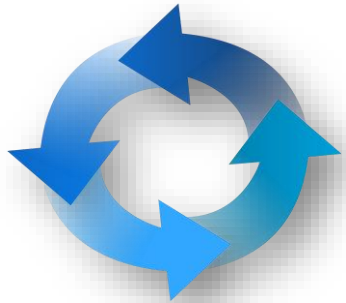
Innovations

- Extension of the “Agent-container” definition
 - *“An agent container is a set of intelligent agents interacting through the same, shared broker (can be a cluster) and referring to shared platform services such as the Directory Facilitator and the Agent Management System.”* In COMPOSITION a more advanced version of such an agent, namely the MatchMaker, operating based on ontology models is adopted.
- Open and closed marketplaces
 - *“A COMPOSITION Open Marketplace is a COMPOSITION Marketplace open to any stakeholder having valid COMPOSITION credentials”.*
 - *“A COMPOSITION Closed Marketplace is a COMPOSITION Marketplace owned by one stakeholder and typically offered to a trusted subset of other COMPOSITION stakeholders.”*



Impact and Reusability

- Improved responsiveness to dynamic market demands
- Improved collaborative extra logistical chains



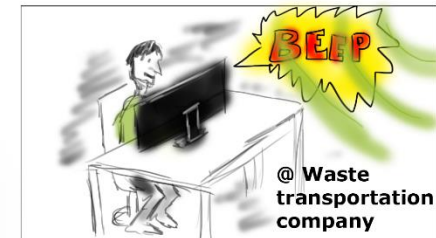
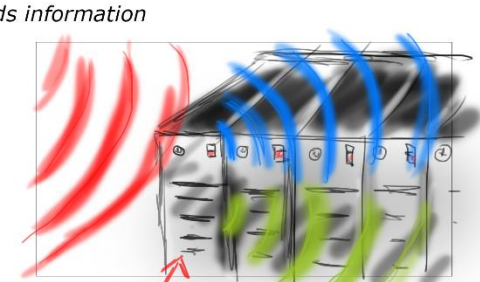
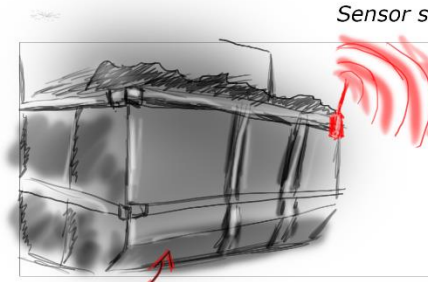
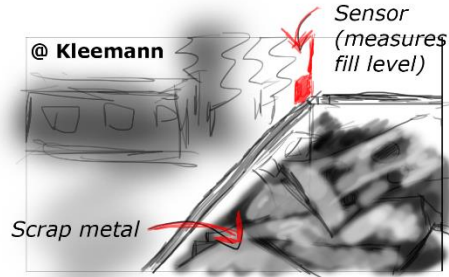
- COMPOSITION eXchange Language easily extendable to cover different scenarios
- Several negotiation protocol could be easily supported and added through simple software modules



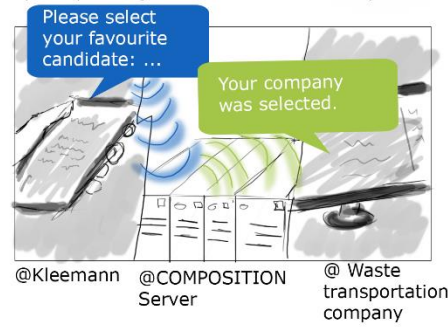
Pilots



Pilots – KLEEMAN



Manager at KLEEMANN receives notification about current fill level and the initialisation of the bidding process in the market place. Manager can confirm the process or abort the action. Interested companies place their offers and are pre-selected from the COMPOSITION System. The manager (KLE) is then asked to select the favorite candidates. Notifications are sent and a pick-up arrangement is done automatically.

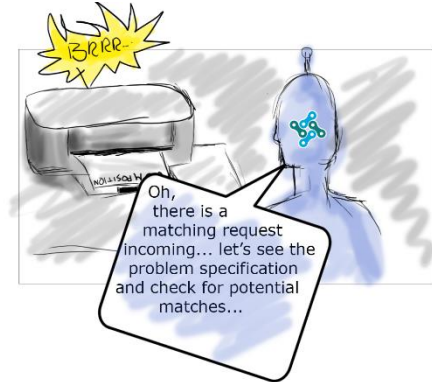
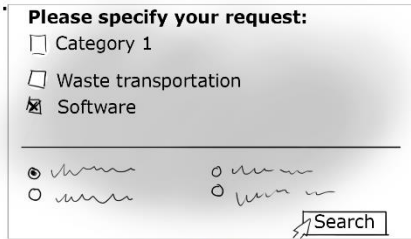
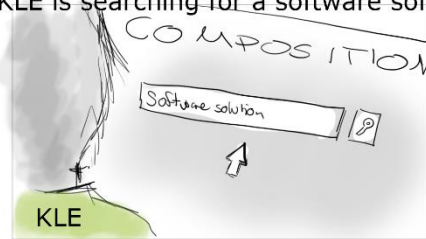


- Supply chain formation/adaptation

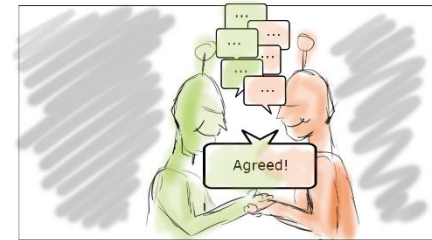
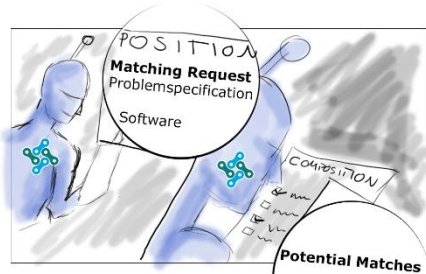


Pilots – ATLANTIS

ATL is offering their services using the COMPOSITION system.
KLE is searching for a software solution:



- Service/need matching
- Pre-negotiation





Demo

COMPOSITION

Bidding Process Management

Status	Contractor	Quantity	Final offer	Participants Action	History
<input checked="" type="checkbox"/> scrap-metal: Pickup Arranged 460cc825-ac00-4813-b60c-60e99e3d5e4b	ELDIA	18 t	79 EUR	i	↻

Requester
KLE

COMPOSITION

Bidding Process Management

Status	Contractor	Quantity	Final offer	Participants Action	History
<input checked="" type="checkbox"/> scrap-metal: Pickup Arranged 460cc825-ac00-4813-b60c-60e99e3d5e4b	ELDIA	18 t	79 EUR	i	↻

Supplier
ELDIA

COMPOSITION

Bidding Process Management

Status	Contractor	Quantity	Final offer	Participants Action	History
<input checked="" type="checkbox"/> scrap-metal: Pickup Arranged 460cc825-ac00-4813-b60c-60e99e3d5e4b	ELDIA	18 t	79 EUR	i	↻

Supplier
Competitor

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