Circular Economy Scenario Based On Smart Waste Management for Industry 4.0
AGENDA

- Use Case Scenario Overview

- Work So Far
  - IDS-enabled IoT Platform for Smart Manufacturing
  - Use Case Architecture
  - IDS-connector Technical Demo

- Extensions for a circular economy scenario
USE CASE SCENARIO

- Optimization of Waste Management procedures based on Smart IoT fill level sensors for bins real-time monitoring

- Use of Data analytics tools for decision support and optimization of resources’ allocation and management

- Creation of a digital Ecosystem for suppliers/requesters matchmaking, online negotiations and dynamic offers evaluation

- Extension of Ecosystem’s usage by bio-energy companies and energy suppliers in order to close the loop
USE CASE SCENARIO (2)

Factory (Waste Producer)

Energy Suppliers

Waste Management Companies

Bio-energy Companies
USE CASE SCENARIO & WORK SO FAR

IDS-ENABLED IOT PLATFORM FOR SMART WASTE MANAGEMENT

- Optimization tool for waste management companies
- State-of-the-art methodologies for data analysis
- Advanced data visualization
- IoT devices connectivity and data analysis
- Secure data exchange
USE CASE SCENARIO & WORK SO FAR
IDS-ENABLED IOT PLATFORM FOR SMART WASTE MANAGEMENT

HIGH LEVEL ARCHITECTURE
USE CASE SCENARIO & WORK SO FAR

IDS-CONNECTOR DEMO
EXTENSIONS FOR A CIRCULAR ECONOMY SCENARIO ENABLED BY IDS INFRASTRUCTURE

- Use of IDS connectors and architecture for the establishment of an Ecosystem for suppliers/requesters matchmaking, online negotiations and dynamic offers evaluation

- Extension of Ecosystem’s usage by bio-energy companies and energy suppliers in order to close the loop
USE OF BLOCKCHAIN TECHNOLOGY IN CIRCULAR ECONOMY SCENARIO ENABLED BY IDS INFRASTRUCTURE

Factory

Waste Producer

Issues

Type & Quantity of waste
Information about the transportation

Bio-energy

Generates

Electricity

Electricity Provider

Returns

Truck number / Driver

Waste Management Company

Confirms

Bio-energy Company

Waste recipient

Receive

Alternative fuel source (biomass)

Converts
WHY IDS?

- IDS infrastructure and architecture enables the creation of a Circular Economy Scenario based Smart Waste Management ecosystem

- Secure data exchange over IDS

- Reducing effort to connect to IoT devices and analytics tools

- IDS standard interface enables different suppliers and customer to connect in a standard way to eFactory infrastructure and create a real-world ecosystem
Thank you !!!

https://www.efactory-project.eu/

alnizami@iti.gr