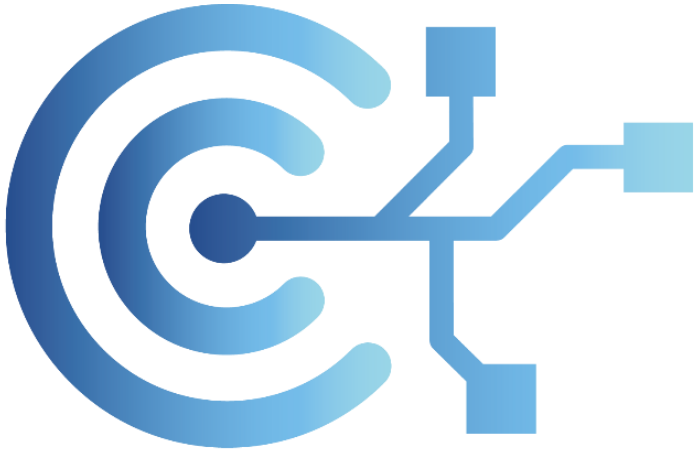


CIRC-UITS

Circular Integration of independent Reverse supply Chains for the smart reUse of IndusTrially relevant Semiconductors

CIRC-UITS is a project funded by the European Union Framework Programme for Research and Innovation Horizon Europe under G.A. n. 101091490

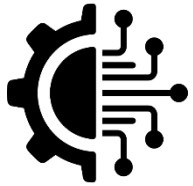
CIRC-UITS

CIRC-UITS is a **3-year Research and Innovation Action** co-funded by the European Commission under the **HORIZON programme** aiming at demonstrating the improvement to the circularity of automotive and mass electronics sectors by recovering materials from wasted products, as well as supporting the reuse & remanufacturing of electronic components into new (high value) products in these sectors.

CIRC-UITS consortium is coordinated by Politecnico di Milano and **is formed by a group of 20 partners from 7 European countries plus 1 extra-European country**.

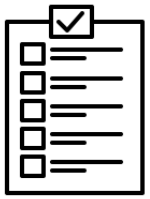
Objectives

CIRC-UITS



Objective A: Unlocking full potentials/benefits of circular practices through digital technologies.

Objective B: Increasing resource efficiency/independency and reducing the negative environmental footprint of electronics production processes through circular behaviors.



Objective C: Improving/standardize information/data sharing/exchange among industrial leaders involved in the same and/or similar value chain.

Objective D: Demonstrating the benefits coming from Digital Circular Economy through 4 pilots.

Objective A

CIRC-UITS

Unlocking full potentials/benefits of circular practices through digital technologies.

- Goal 1: Support the transition towards circular practices through the adoption of different digital technologies.
- Goal 2: Identify/track/share data about critical/hazardous materials throughout their lifecycle (e.g. materials chemistry, origin, state of health and chain of custody).
- Goal 3: Define a Product Environmental Footprint and enable the EU Environmental Technology Verification.
- Goal 4: Link reference sectors with the EU LCA platform.
- Goal 5: Decrease transaction costs and increase collection rates.

Objective B

CIRC-UITS

Increasing resource efficiency/independency and reducing the negative environmental footprint of electronics production processes through circular behaviors.

- Goal 1: Increase resource efficiency/independency from imported materials.
- Goal 2:. Reduce the negative environmental footprint of current manufacturing practices.
- Goal 3: Identify the best EoL scenarios in order to increase reuse, refurbish, remanufacturing and recycling.

Objective C

CIRC-UITS

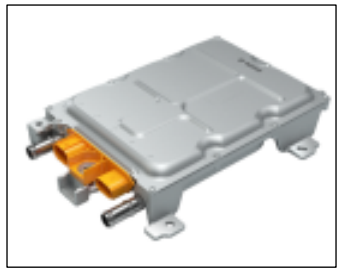
Improving/standardize information/data sharing/exchange among industrial leaders involved in the same and/or similar value chain.

- Goal 1: Demonstrate in practice what could be the real benefits coming from the adoption of circular behaviours.
- Goal 2: Organize/implement dissemination, communication and education actions.

Objective D - Pilots

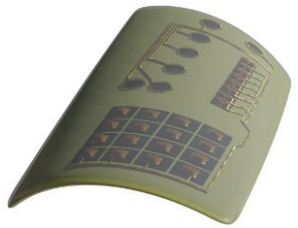
CIRC-UITS

Demonstrating the benefits coming from Digital Circular Economy through 4 pilots.



EV inverters (Pilot 1)
Support the development of circular ECUs embedded in EV inverters and Battery Management Systems (BMS).

Tyre sensors (Pilot 2)
Support the development of circular tyre sensors.



In-Mold Electronics (IME) (Pilot 3)
Support the development of circular IME with fully embedded alternative to PCB based on printed electronics.

Obsolete PCBs (Pilot 4)
Support the classification and storage of PCBs from different WEEEs.

Project ambitions

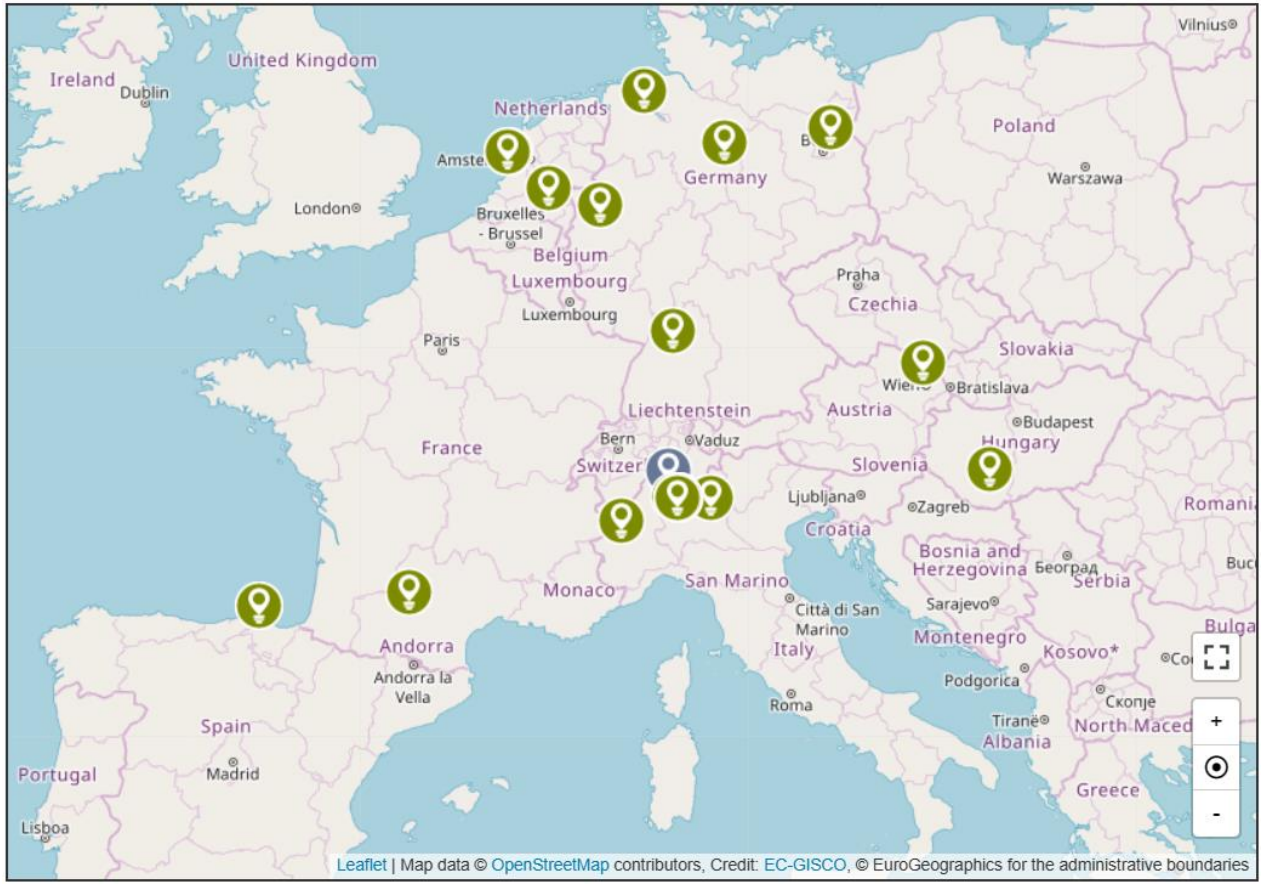
CIRC-UITS

I	II	III
New design and manufacturing practices allowing to apply the **circular economy paradigm in the automotive and mass electronics sector** to: • improve the electronics circularity level and • reduce the dependency of European electronics-related sectors from extra-EU supplies.	**Compare different production methods** to optimize materials adopted in **flexible electronics** in terms of • **environmental footprint** of the production process (e.g. energy consumption/expenditure) and • **amounts and nature of materials**, CIRC-UITS will The final selection of more circular options will be complemented with cost-benefits analyses.	**The digital tools developed** will allow the **evaluation of refurbishment and spare-parts recovery**, as well as **enhanced recovery** through a prior disassembly step in addition to recycling by mechanical shredding and separation in different fractions. **Demonstrate how the reuse of specific materials/components could allow the development of new (high value) materials and products** for automotive and mass electronics.

Project Partners

CIRC-UITS

- Politecnico di Milano (POLIMI).
- OFFIS - Institut für Informatik (OFFIS).
- Austrian Society for Systems Engineering and Automation (SAT).
- Scuola universitaria professionale della Svizzera italiana (SUPSI).
- Asociación de Empresas Tecnologicas Innovalia (INNOVALIA).
- Nederlandse Organisatie Voor Toegepast Natuurwetenschappelijk Onderzoek (TNO).
- TXT E-Tech Srl (TXT).
- Centro Ricerche Fiat Scpa (CRF).
- Robert Bosch GmbH (BOSCH).
- Alpha Assembly Solutions Germany GmbH (ALPHA).
- Continental Automotive France SAS (CONTI).
- Beko Europe (WHMAN).
- Material Recycling and Sustainability (MARAS) B.V. (MARAS)
- BeSu Solutions GmbH (BESU).
- Pollini Lorenzo e Figli srl (POLLINI).
- TracXon BV (TRACXON)
- Erion WEEE (ERION).
- DIN Deutsches Institut fuer Normung EV (DIN).
- MADE Scarl (MADE).
- Pécs-Baranyai Kereskedelmi és Iparkamara (PBKIK).



Thank you for your attention

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