

ADIR – NEXT GENERATION URBAN MINING

AUTOMATED DISASSEMBLY, SEPARATION AND RECOVERY OF VALUABLE MATERIALS FROM ELECTRONIC EQUIPMENT

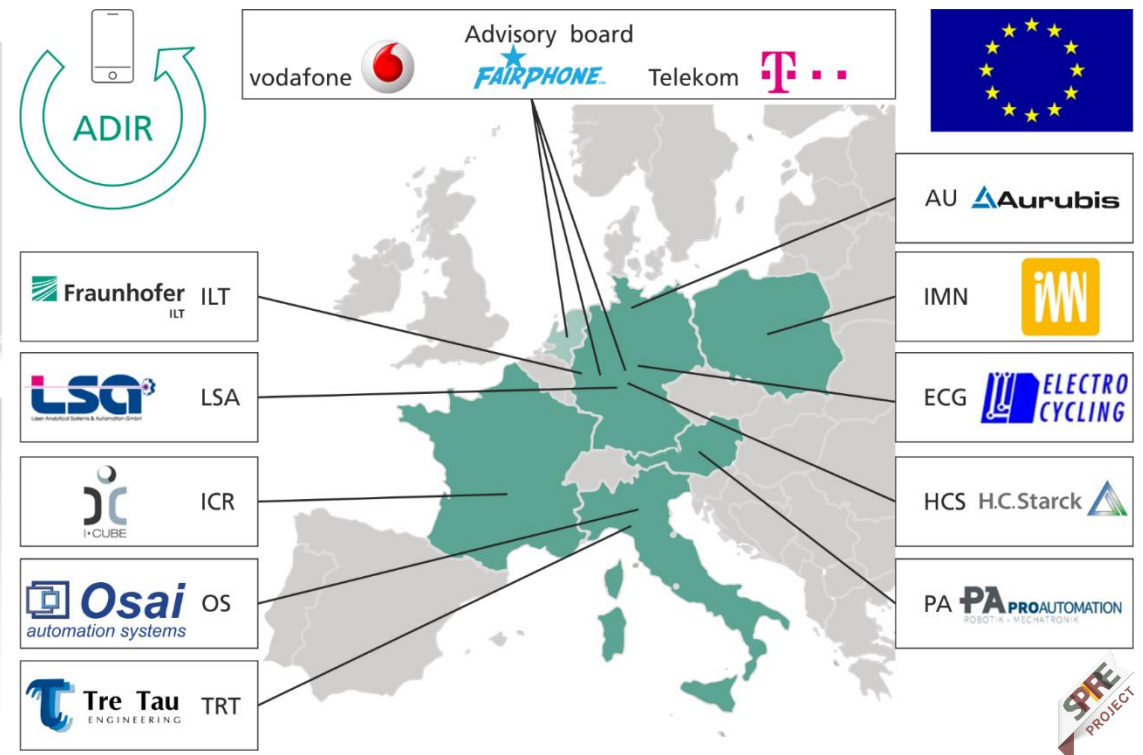
Call Spire7

Recovery technologies for metals and other minerals

Duration 9/2015 – 8/2019

Cord Fricke-Begemann, Fraunhofer ILT

2017 EU process industry conference, Sep. 19, Brussels



ADIR project case study

1. The EU/ SPIRE needs

Recovery of raw materials from end-of-life products.

SPIRE goal: 20% less primary raw material usage.

2. The Project Solution

Selected disassembling of products will replace non-selective mechanical processing.

4. How will this happen?

Automated disassembling machines will provide enriched material fractions to the process industry.

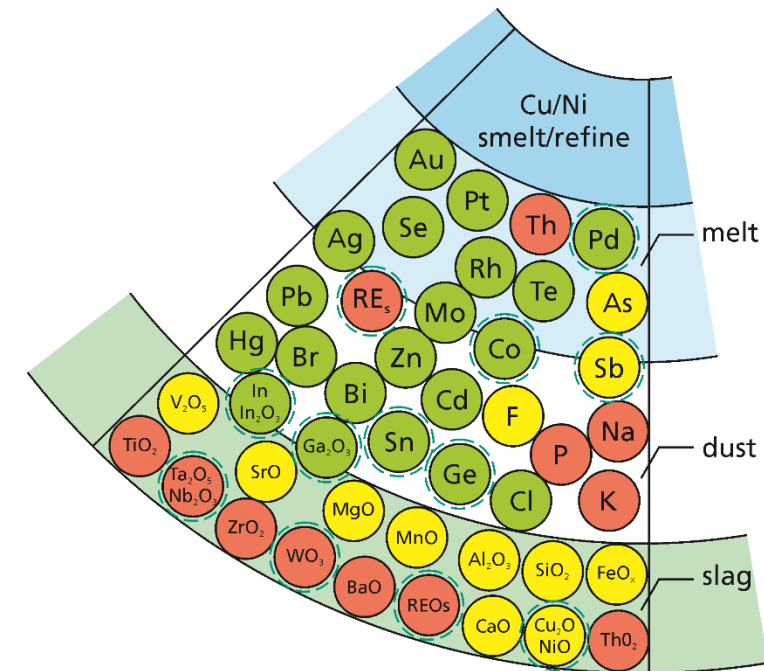
3. Value to Customers

Closed material cycles will provide high quality secondary raw materials and avoid losses to slag dumping EU export.



ADIR expected sustainability impact

- in EU annually 200 mio. recyclable mobile phones and 60 mio. PCB from personal computers
- today no recovery of Ta/Nb/W from post-consumer electronic scrap
- added value from sorted technology metals fractions will support recycling activities and reduce import dependencies by up to 35 % (e.g. for Ta)

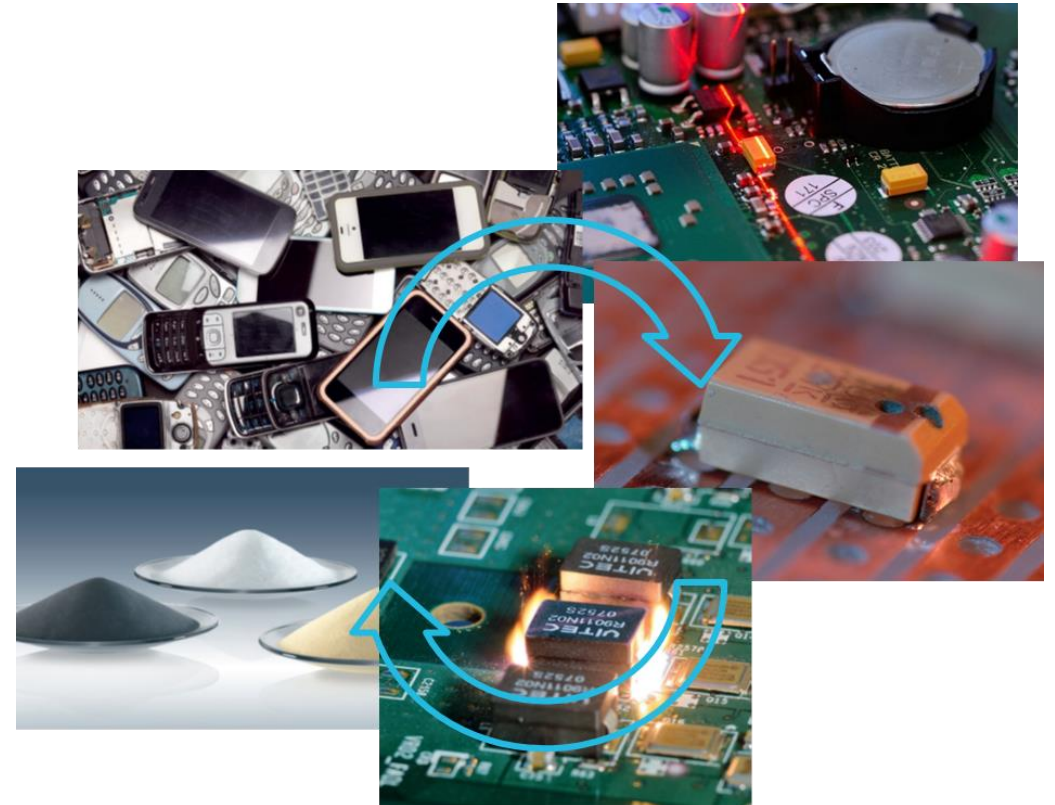


part of the „wheel of metals“

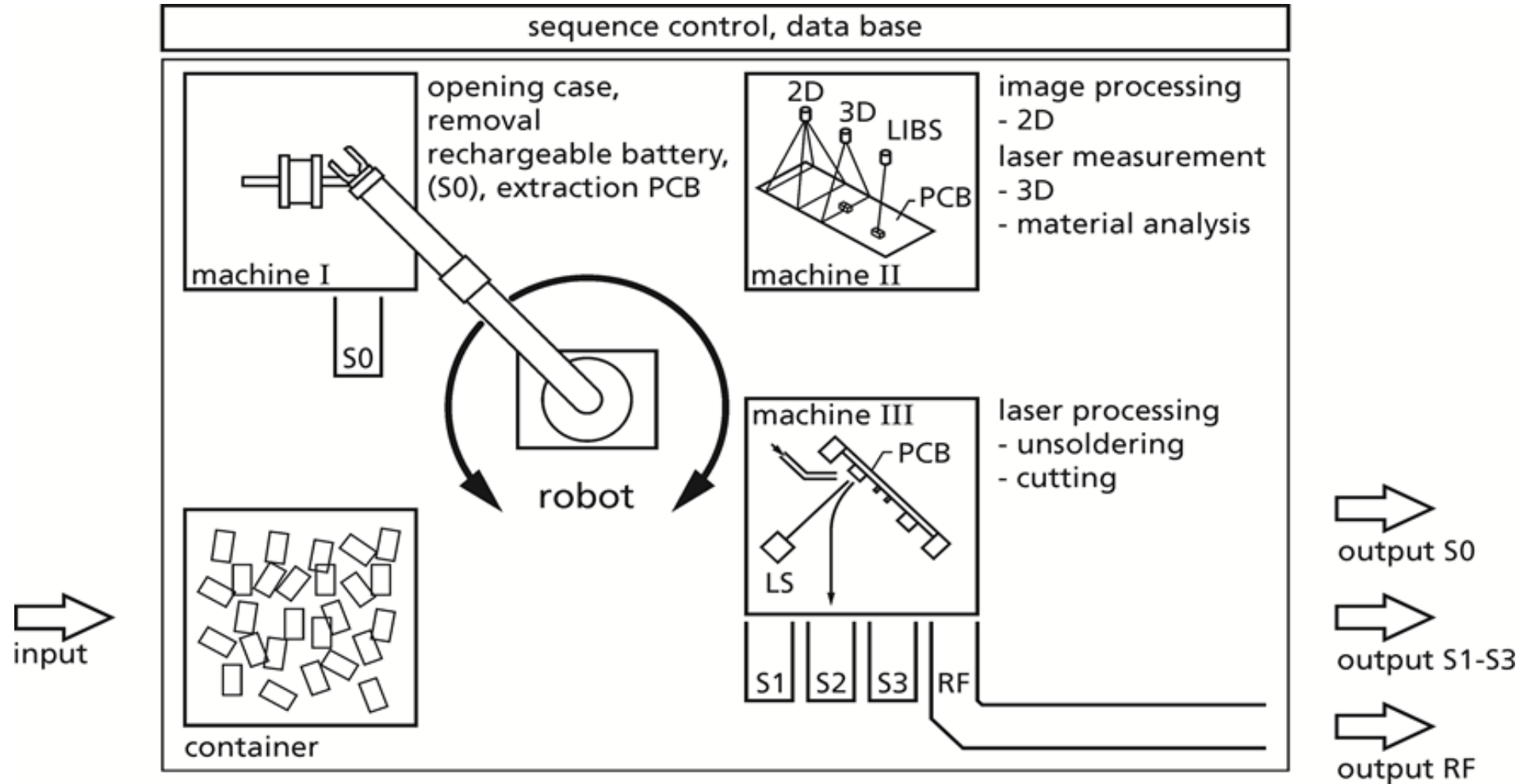
[Metal recycling – opportunities, limits, infrastructure, UNEP Int. Resource Panel 2013]

ADIR outputs for other SPIRE projects

- concepts for automated selective disassembling,
- technology for robotic handling,
- material segmentation,
- fast localized material identification,
- contact-free extraction of high-value components,
- metallurgical treatment of enriched secondary raw materials



ADIR concept – key technologies



ADIR – next generation urban mining

coordination

- Fraunhofer Institute for Lasertechnology ILT, Aachen
- Prof. Dr. Reinhard Noll

contact

- Dr. Cord Fricke-Begemann
- cord.fricke-begemann@ilt.fraunhofer.de

web

- www.adir.eu

