



# Next generation urban mining – Automated disassembly, separation and recovery of valuable materials from electronic equipment: overview of R&D approaches and first results of the European project ADIR

Horizon 2020

Call: H2020-SPIRE-2015

Topic: SPIRE-07-2015

Type of action: IA

Proposal number: 680449

Proposal acronym: ADIR

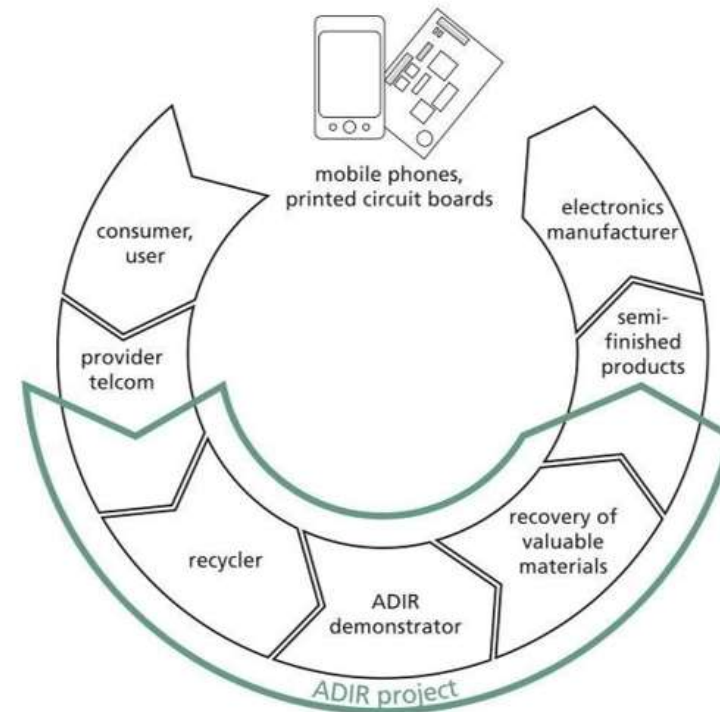






to demonstrate the feasibility of a key technology for the automated disassembly of selected components from electronic equipment (PCBs) to separate and recover valuable materials (gold, tantalum, tungsten, niobium, rare earths)

## The GOAL



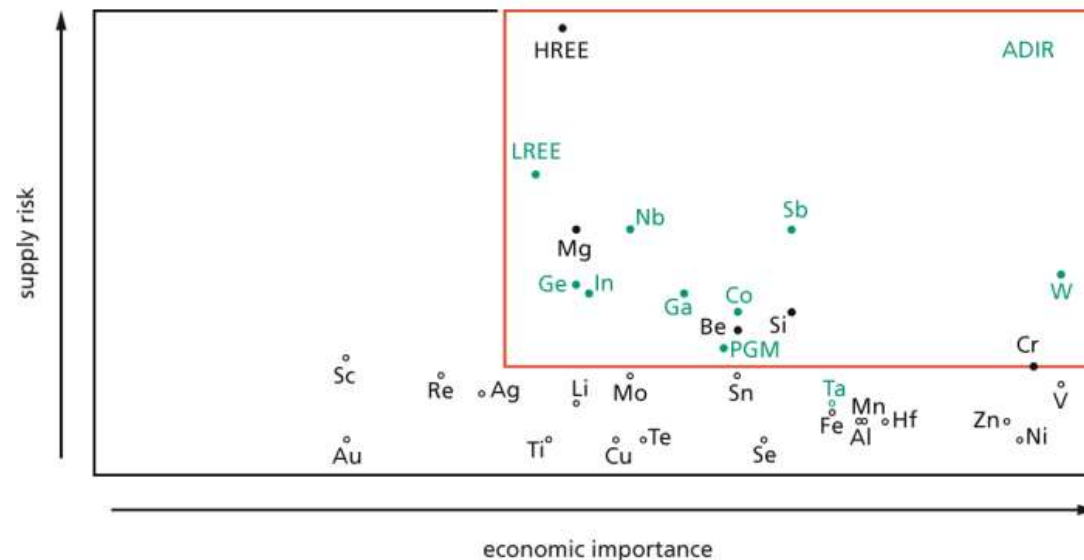
The concept is based on **image processing**, **robotic handling**, **3D laser measurement** (spectroscopy), **laser processing** (to selectively unsolder or cut off parts of a printed circuit board), and automatic separation into different sorting fractions.

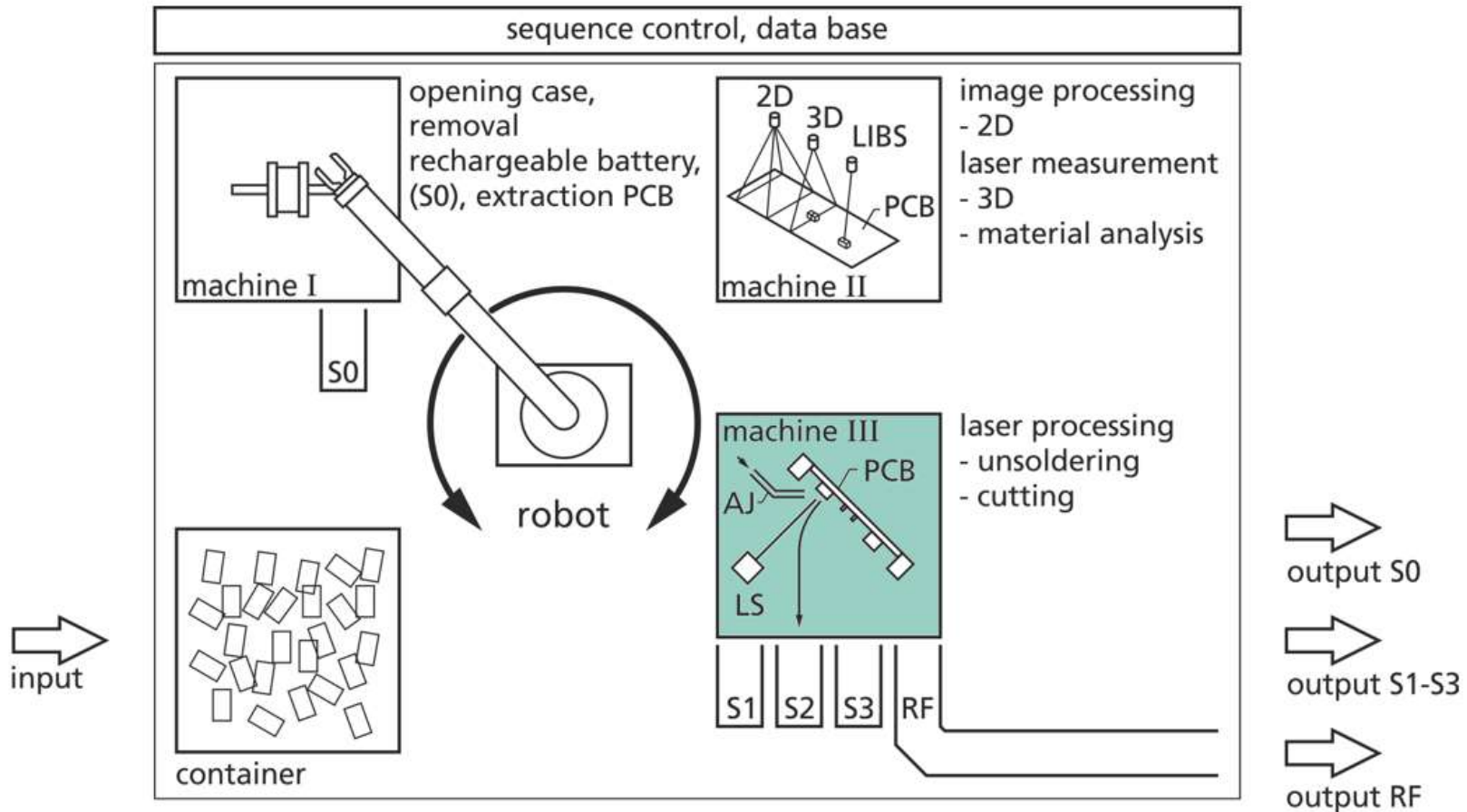
*OSAI has been involved in the design and manufacturing of a machine (AG3) for LASER processing:*

- *DESOLDERING of selected components*
- *CUT OUT of part of PCB*
- *SORTING of extracted components*



A machine concept was worked out being capable to selectively disassemble PCBs and MPHs with short cycle times to gain sorting fractions containing high amounts of valuable materials. Examples are those materials with high economic importance and supply risk such as tantalum, tungsten and neodymium.

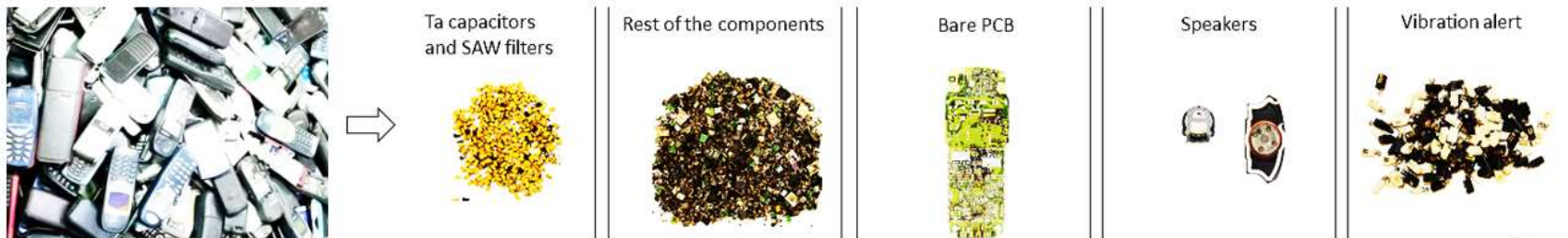








- ❑ Real chance to push forward novel recycling routes to further extent the efficient recovery of valuable materials from end-of-life electronics (PCB and Mobile Phones)
- ❑ At high quality level in Europe
- ❑ Capability of inverse production for sustainable society
- ❑ Laser technology for selective identification, removal and sorting



- ❑ ADIR project will end 31<sup>st</sup> August 2019
- ❑ Oct. 2018 starting of validation phase

*Thanks for the attention  
and  
See you for the next update*





where ideas become technology



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