ADIR

Full Title:
Next generation urban mining -
Automated disassembly, separation and recovery
of valuable materials from electronic equipment

Aim:
The goal of ADIR is to demonstrate the feasibility
of a key technology for next generation urban
mining. An automated disassembly of electronic
equipment will be worked out to separate and
recover valuable materials. The concept is based
on image processing, robotic handling, pulsed
power technology, 3D laser measurement, real-
time laser material identification (to detect
materials), laser processing (to access
components, to selectively unsolder these; to cut
off parts of a printed circuit board), and automatic
separation into different sorting fractions. A
machine concept will be worked out being
capable to selectively disassemble printed circuit
boards and mobile phones with short cycle times
to gain sorting fractions containing high amounts
of valuable materials. Examples are those
materials with high economic importance and
significant supply risk such as tantalum, rare
earth elements, germanium, cobalt, palladium,
gallium and tungsten.

Concept:
A demonstrator will be developed and evaluated
in field tests at a recycling company. The
obtained sorting fractions will be studied with
respect to their further processing and recovery
potential for raw materials. Refining companies
will define requirements and test the processing
of sorting fractions with specific material
enrichments.

Start date:
01/09/2015

End date: