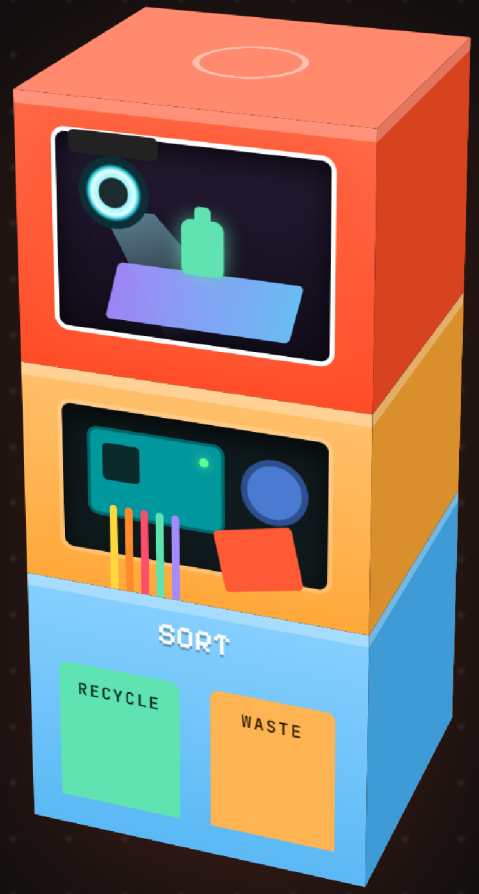
JUNCTION 2026 · THE GREEN EUROPEAN RENAISSANCE

SortSight.
Edge AI that knows what's there.

Sensors plus a local AI model that identifies waste on the device, with no cloud. A bin today. Drones and scanners next.

EDGE AI | NO CLOUD | BUILT IN EUROPE

Artem · Aren · Mikhail · Franciszek



01 · TECHNOLOGY · THE PROBLEM

Pollution is piling up on two fronts. Both start with not knowing what's there.



New waste, every day

Every person in the EU generates **181 kg** of packaging waste a year, and only **15.3 of 35.9 kg** of plastic packaging is recycled.



Old waste, hard to reach

Tourist and research litter in Antarctica. Heavy metals and chemicals in former conflict zones. Mapping is **slow, manual, often dangerous.**

Source: Eurostat, 2024 data.

01 · TECHNOLOGY · OUR INSIGHT

One technology. Anywhere it's needed.



1 · SENSE

Sensors read the item or the terrain.



2 · CLASSIFY

A local AI model decides what it is, on the device.



3 · ACT

Route it, log it, or send the right crew.

Same technology in a bin, on a drone, in a handheld scanner. Only the sensors and the model change.

01 · TECHNOLOGY · NEW PLACES

From the bin to Antarctica.

NEXT · CONCEPT



Map from above

On a drone, a satellite or a handheld scanner, sensors chosen for the job map plastic, metal and chemical residue. Theory: not built or tested.

NEXT · CONCEPT



Send the right crew

The detected type decides who goes: metal recovery, hazardous-chemical specialists, general cleanup.

THEN



City-scale analytics

Waste data by place across a whole city.

Roadmap, not built or tested. The technology stays the same; the sensors and the model change.

PART 01 DONE · PART 02 NOW

Now: one example.

A smart sorting bin. SortSight, built this weekend on the Arduino UNO Q.

01 · The technology

Sense. Classify. Act.

Anywhere it is needed.

02 · The example

A smart sorting bin

The technology, working.

02 · THE EXAMPLE · THE FIRST PROOF, THIS WEEKEND

A smart sorting bin. The technology, working.

Camera

Looks at the item held on the trapdoor.

QRB2210 · Linux

Local model: paper/cardboard, plastic, metal, other.

STM32U585 · MCU

Turns the chute, then opens the trapdoor.

Log

Category, time and bin location per item.

LIVE DEMO | No internet | No image leaves it

Sorting runs on the device. Unsure items go to Other.
Known limit: clear glass and transparent plastic.



02 · THE EXAMPLE · SOURCE ANALYTICS · GEMMA

Local AI senses. Gemma reasons.



2.6x

Gemma

Every item is logged by place, category and time. Only labels and timestamps leave the bin, never images. Analytics runs on the exported log, so sorting never depends on it.

Illustrative numbers, not measured data.

WHO IT'S FOR · WHAT'S NEXT

Who it's for, what's next.

Who it's for

Cafeterias, venues and events that sort packaging waste. Cities and waste operators who need data by place.

Next steps

1 Pilot at one cafeteria or event.
2 Add a metal sensor and a larger labelled dataset.
3 Test non-camera sensors with the same pipeline on a handheld scanner, before any drone or satellite.

POSSIBLE MODEL · HYPOTHESIS Lease bins to venues, sell data by place to cities and operators.

THANK YOU

Sense. Classify. Act.

One technology. Cleaner sorting at the source, data by place, and a path to places no surveyor can safely reach. Edge AI is how Europe cleans up on its own terms.



Team Galilean Moons

ARTEM · AREN · MIKHAIL · FRANCISZEK

Junction 2026 · The Green European Renaissance · Arduino UNO Q