

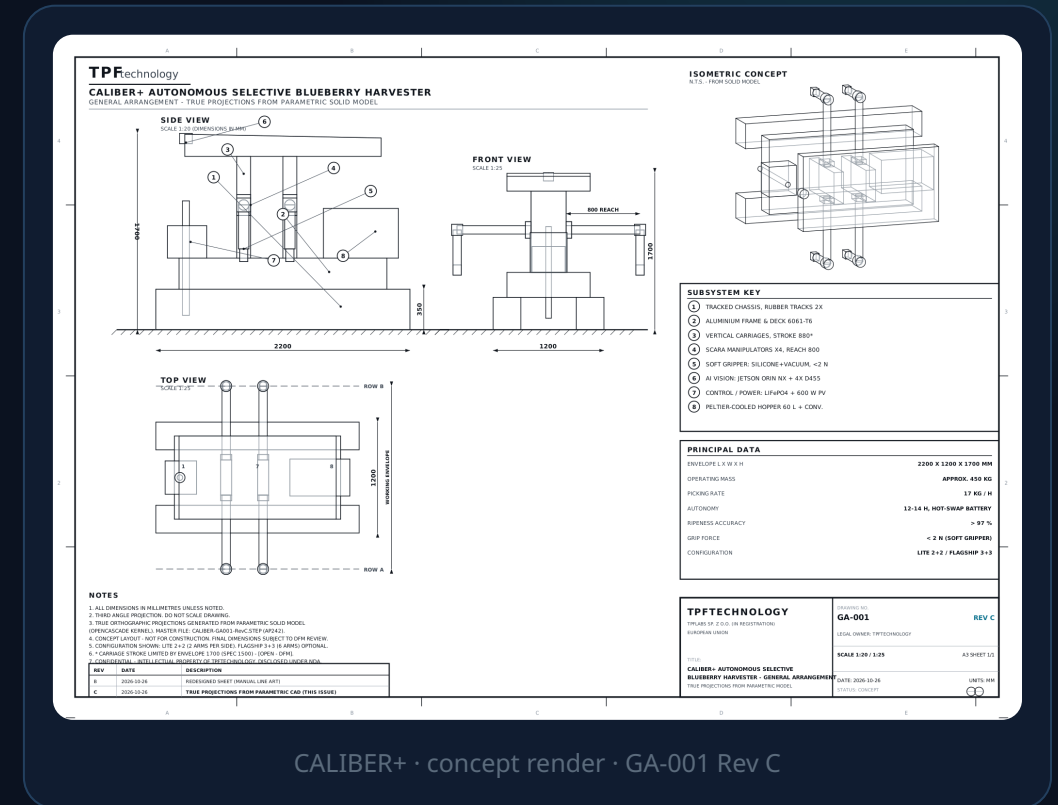
TPF LABS · AUTONOMOUS FIELD ROBOTICS

CALIBER+

The autonomous harvester that picks like hands,
works like a machine

Selective harvesting of fresh-market blueberries. Two rows at once, berry by berry, zero crop loss, 12-14 hours of daily autonomy.

Investor deck · Seed round 2026



CALIBER+ · concept render · GA-001 Rev C

THE PROBLEM

Fresh-market berries are picked by hand, and hands are running out

€2.4/kg and rising

Manual picking is the single largest cost in fresh-market blueberry production. Seasonal labour is scarce across the EU and getting scarcer every year.

Harvesters damage fruit

Over-the-row harvesters strip green and ripe berries together, bruise the crop and lose about 5% in the field — fruit drops out of the premium fresh category.

Yield left in the field

Without reliable pickers, ripe berries wait days on the bush. Quality, weight and price all decay with every missed pass.

Premium fresh-market fruit needs **selective, gentle, round-the-clock picking** — exactly what humans do best and robots have never done. Until now.

THE PRODUCT

CALIBER+ — selective by design

🧠 AI ripeness vision

YOLOv9 + EfficientNet-B4 on NVIDIA Jetson Orin NX, trained on a 50,000-image berry dataset: finds every ripe berry, skips green ones, grades size.

>97% ripeness accuracy · ± 1 mm grading

🍇 Soft hybrid gripper

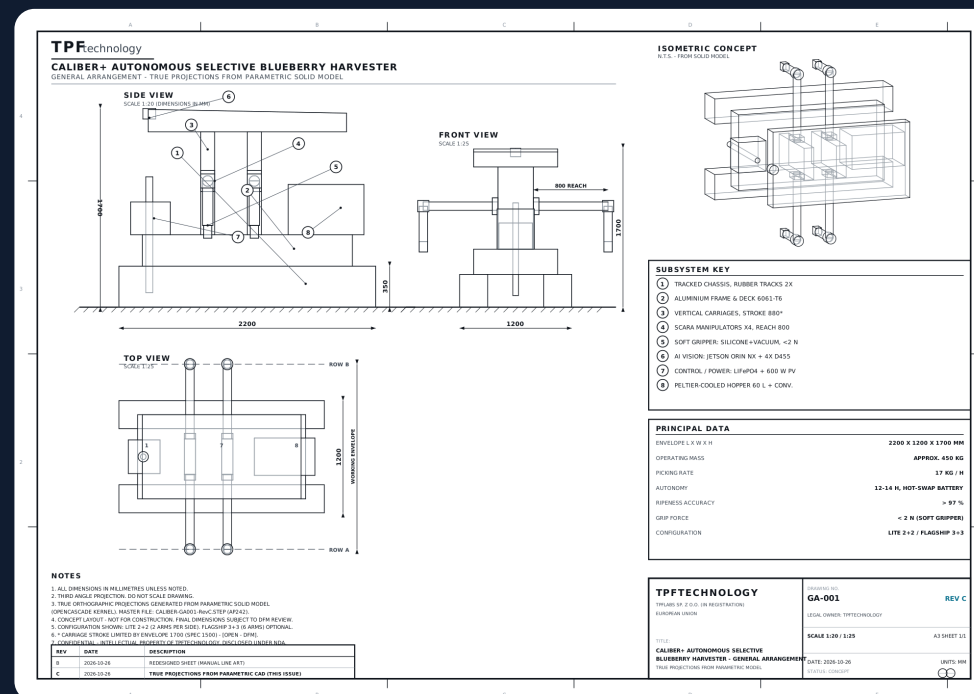
Silicone fingers with vacuum assist hold each berry with under 2 N of force — no bruising, no drops. Patent filed, FTO completed.

soft-touch ≤ 2 N · gripper BOM $\leq$ €100

☀️ All-day autonomy

48 V LiFePO₄ with a 600 W solar roof and 45-second hot-swap. Tracked chassis for soft soil; LiDAR + RTK-GPS navigation, two rows at once.

12-14 h shifts · 4 SCARA arms · 17 kg/h



General arrangement GA-001 · concept layout

Robot-as-a-Service: no capex for the farm

TIER	PRICE	WHAT THE FARM GETS
RaaS (per season)	€26,000 / season	≈€1.9/kg vs ≈€2.4/kg manual · service, software, updates · SLA: back in row ≤2 h
Purchase — Lite (2+2 arms)	from €55,000	Pilot-series unit, hybrid EU assembly, CE certification path
Purchase — Flagship (3+3 arms)	from €80,000	Higher throughput configuration for large operations

Pilot 30 / 60 / 90

Row survey & vision calibration → autonomous harvest on 1 ha with measured KPIs → full pilot report and season-contract option. Paid 50/40/10 by stage.

Data as a product

Weekly harvest reports by ripeness class, yield maps and cost-per-kg — the analytics layer farms keep paying for.

Hybrid manufacturing

EU final assembly, optimized mechanics from an audited contract manufacturer (DFM package in review with WayKen, NDA signed).

De-risked step by step

Gripper prototype: built

The core risk — gentle handling at speed — is lab-tested. Vision stack validated on a 50k-image dataset. Patent filed; freedom-to-operate analysis completed.

Supply chain engaged

Mutual NDA signed with contract manufacturer WayKen (CN); CALIBER+ tech package and GA-001 under DFM review for prototype and 50–100 units/year series.

Independent validation track

AgriFoodTEF route opened with ILVO (BE) — ripeness-model validation and 2027 field trial design — and a feasibility meeting with INRIA (FR) in progress.

First farm demand

GPO Polskie Jagody — one of Poland's largest blueberry producers — responded to outreach asking for machine details and cooperation models. Pilot talks started.

Early R&D is funded by **TPFtechnology**, the profitable parent development studio behind the project — founder capital, no debt.

Seed round: €1.0–1.2M

from validated gripper to pilot fleet

2026 · Seed

Close the round · company TPFlabs Sp. z o.o. incorporation · engineering team scale-up · long-lead components for field prototype.

2027 · Field prototype & pilots

Field prototype built with contract manufacturing · 1–3 pilot farms run the 30/60/90 program · ILVO/AgriFoodTEF independent validation.

2028 · Commercial launch

Pilot-series production · CE under EU Machinery Regulation 2023/1230 · first RaaS season contracts · sales channel build-out.

Use of funds: engineering & prototype build (~45%), pilot fleet & field operations (~30%), certification & IP (~15%), team & operations (~10%).

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