



## The TALOS Platform for Solar Panels and Crops Together

A single, easy-to-use platform that helps look after both the solar plant and the crops growing beneath it, guiding autonomous robots for panel inspection and crop monitoring.



Funded by  
the European Union

At the pear-tree orchard in Randwijk, in the Netherlands (a Wageningen University site), solar panels and fruit trees share the same land: an approach called AgriPV.

The plant is small (50 kW, with monofacial and semi-transparent panels), but the challenge is unusual: the same site has to be managed for two things at once, **energy and agriculture**, often by people with very different backgrounds. The TALOS Platform brings both together on one screen, guiding **a drone that inspects the panels and a ground robot that monitors the crops**, so the plant owner, the grower and the agronomist each get what they need.

On a typical AgriPV site, the solar plant and the farming are managed with separate tools and separate teams.

TALOS puts both into a single platform, with two streams of suggestions side by side (one for panel maintenance, one for crop management) and robots that can work the same field safely. Three things change for the team: **the process becomes more straightforward** (suggestions arrive as clear actions, not raw data); **human control stays explicit** (people validate, adapt or reschedule every mission); and **evidence is captured by default** (each job leaves a structured record). The project targets a reduction of up to 90% in human risk exposure, maintenance periods shortened by over 70%, and around 5% lower O&M costs.

This brief is about the platform the team sees and uses. The robots and the intelligence behind them are described in the companion brief, Technical Brief 6 / 6.

The TALOS Platform is one online workspace, built by the project consortium. It handles both the solar and the crop side through the same simple sequence.

On the same screen, **the team can see the solar plant's status** and the **crop-health maps, plan and adjust missions**, monitor robots live (location, battery, progress and camera streams), and open post-mission reports. A stop control halts any robot at any time, and a short feedback form after each job helps the system keep improving. **A training programme, designed with first-time robot users in mind**, prepares growers and agronomists as well as the plant team.

**MONITOR**

The platform watches the plant's production, the weather and the state of the crops.

**DETECT**

It identifies panel faults and, separately, signs of crop stress or variation.

**RECOMMEND**

It proposes a robot mission, or an alert for the team, for either the solar or the crop side.

**VALIDATE**

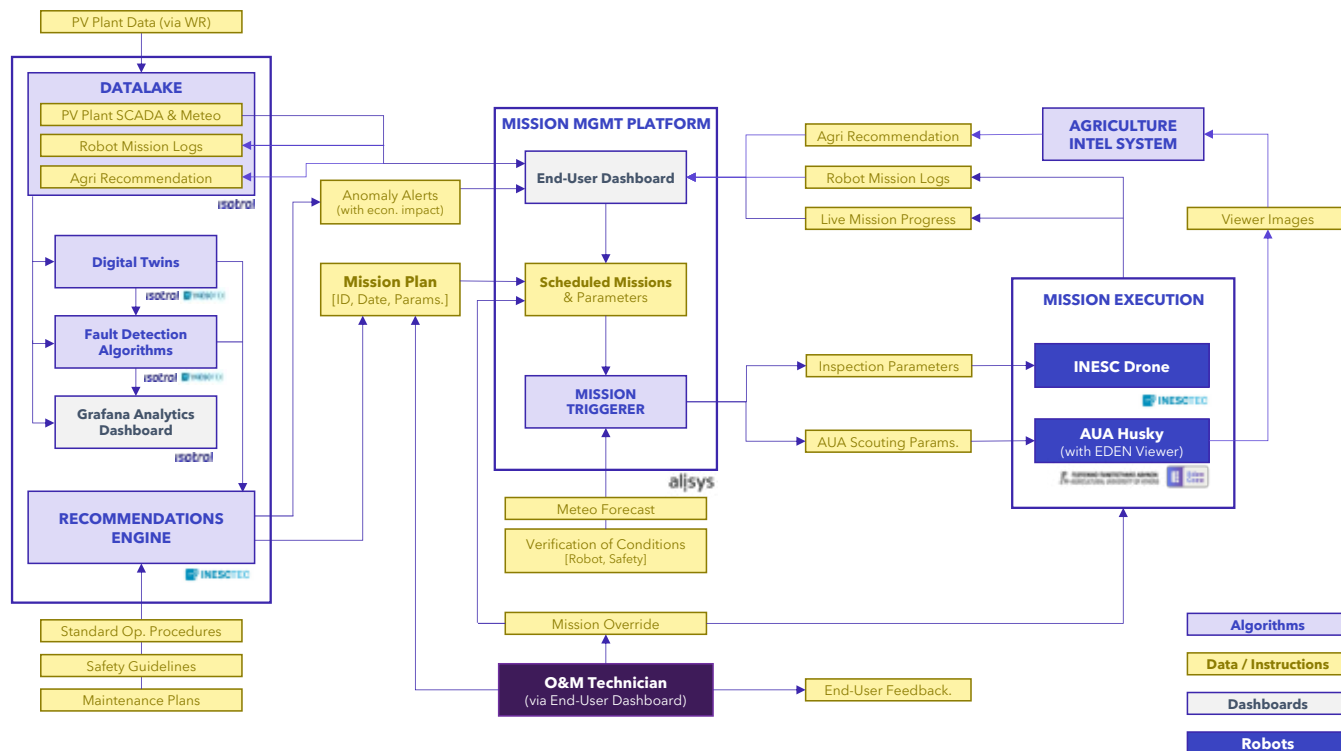
The right person (plant manager, grower or agronomist) reviews and can adjust it or set it aside.

**EXECUTE**

The drone or the ground robot carries out the job under supervision, followed live on a map.

**REPORT**

Images, logs and results are stored automatically for follow-up.



A photograph of a greenhouse interior, showing rows of plants in the background. In the foreground, there is a robotic monitoring system consisting of a metal frame, a camera, and various sensors. The system is positioned between the plant rows. The text is overlaid on the left side of the image.

In the morning, the grower opens the crop view and sees that one part of the orchard is flagged for a closer look, along with a suggested crop action.

They approve a monitoring run, and the **ground robot sets off between the tree rows, gathering images of the crop.** Later, the plant manager checks the solar view: production is normal, but the platform suggests inspecting a panel section flagged as under-performing, and approves it for the afternoon. **The inspection drone flies its route while the ground robot keeps a safe distance.** By the end of the day, the crop-health map is updated, feedback is logged, and all records are stored automatically.

*[Illustrative example. Real timings and the sequence of a typical demo day to be confirmed with the pilot team.]*

Autonomous O&M works best when it is introduced as a supervised, scalable ecosystem, with people central to building trust and improving the system over time.

The platform delivers value to three groups:

#### FOR GROWERS AND AGRONOMISTS

More frequent, objective crop observations and fewer manual scouting walks, with clear crop-health maps.

#### FOR ASSET MANAGERS

Traceable records and evidence for follow-up, and data-driven identification of problems and O&M planning.

#### FOR PLANT OWNERS

More scalable maintenance routines across both energy and crop work, with potential to lower long-term costs and improve return on investment.

#### Recommendations from the TALOS AgriPV experience

- **Supervise autonomy, especially during early roll-out:** keep the team validating scheduling and execution to reduce risk, spot improvements and build confidence.
- **Plan the logistics that make autonomy work:** more frequent robotic jobs need the right support (robot upkeep, water availability, charging infrastructure).
- **Adapt roles, procedures and training:** teams need updated safety rules and new skills to supervise autonomous work effectively.
- **Treat the platform as a future-proof layer,** being robot-agnostic, it can take on additional robots and O&M tasks as trust grows.

## GLOSSARY

|                    |                                                                           |
|--------------------|---------------------------------------------------------------------------|
| AgriPV             | Growing crops and generating solar power on the same piece of land.       |
| O&M                | Operations & maintenance: the day-to-day running and upkeep of the plant. |
| Drone (UAV)        | A small uncrewed aircraft used to inspect the panels from the air.        |
| Ground robot (UGV) | A self-driving ground vehicle that monitors the crops.                    |
| Scouting           | Checking the crop in the field for health, growth and yield.              |

## PROJECT PARTNERS BEHIND THE PLATFORM



User interface and mission management of the platform.



Central store of plant data (feeding the platform's live views and analytics).



Maintenance suggestions and fault alerts shown on the platform.



Training programme and feedback tools.



Crop-health monitoring and agricultural suggestions shown on the platform.



Site owner and grower: requirements, on-site training and validation.



TALOSPROJECT.EU



TALOS EU PROJECT



INFO@TALOSPROJECT.EU



Creative Commons' licence (BY NC ND 4.0)



Funded by the European Union under Horizon Europe Grant Agreement No. 101119744. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them.