



PROBLEM/ISSUE ADDRESSED

E.R.A. aims at speeding up the PV plants construction through the industrialization of a robotized temporary factory that assembles the components of the PV field. Thus determining benefits in terms of operator working condition, process quality and productivity, time-to-market.

Solar trackers assembly exposes operators to repetitive handling of heavy loads and working variable environmental conditions. Concentrating the activities in a temporary factory, the operator works in a controlled environment performing high-added-value tasks while the robot is employed in repetitive heavy duty operations.

SOLUTION

The proposed solution includes:

- 1) a robotized station inside a standard semi-trailer that can be easily shipped from a solar plant to another. The robot handles the 3 main elements of a solar tracker: the PV modules, the supporting beams and the torque tube, that permits the rotation of the modules to follow the sun. The screws and bolts tightening operations necessary to connect those elements are performed by the operators, that work side-by-side with the robot thanks to proper laser scanning techniques.
- 2) a vehicle with a special lifting equipment, controlled by a trained operator, that permits the handling of the preassembled tracker structure up to 48 m² of extension. This system allows an accurate positioning of a such huge structure on the tracker structural poles.

WHY IT IS IMPORTANT FOR SOCIETY

Photovoltaics is one of the key technologies to foster the energy transition towards a more sustainable system. The project aims at introducing a disruptive technology in the market, that will break and redesign the value chain of solar plants manufacturing. The adoption of the automation is expected to reduce the commissioning time and time-to-market of solar plants, thus boosting sustainable energy production.



“ Thanks to EIT we were able to industrialize and test a disruptive technology for PV sector that enables the shift of automation out of the factory. ”



MAIN RESULTS & INSIGHTS

- Solution validation and full scale testing
- Human job quality assessment
- Scale-up assessment and go-to-market strategy



FRANCESCO BECCARISI
Innovation Manager COMAU
Advanced Robotics and Digital Solutions

