

1st Newsletter

ZERODEFECT4PV



ZERODEFECT4PV

Advanced Panel-Level Monitoring and Predictive Maintenance for Optimized Solar Plant Efficiency

” ZERODEFECT4PV project offers optimal panel-level monitoring by deploying Data Collection Units(DCU) linked via a mesh network ”

Dear readers!

We are happy to present you with news from the project. This is the first newsletter of the project. The ZERODEFECT4PV project has finalized two deliverables:

- D2.2 System Specification and Design creates a blueprint that integrates various components into a cohesive framework, including Data Collection Units (DCUs), communication protocols, and data flow mechanisms. The goal is to develop an infrastructure that supports panel-level monitoring and accurate data collection, addressing the shortcomings of traditional string-based monitoring systems.

The scalable architecture employs individual DCUs on each panel or small cluster, with data routed through a mesh network to ensure reliable communication with the Integrated Operations Center (IOC).

- D2.3 Legal Requirements and Regulatory Analysis Report analyzed and assessed the legal requirements and regulatory landscape related to the ZERODEFECT4PV project. Given the nature of the project, which involves deploying innovative solar panel monitoring technology and data collection units (DCUs) in multiple EU countries, ensuring compliance with various regulations governing energy, data privacy, and telecommunications is essential.

This deliverable seeks to provide a comprehensive understanding of the legal obligations the project must adhere to, while also identifying potential barriers to implementation or deployment. The analysis is based on applicable European Union (EU) regulations, national laws, and international standards.

You might visit the social media channels listed on the next page to express your thoughts.

Project Duration

01.06.2024 - 31.05.2026

Project Budget

Total Budget: € 867,000

Funding: € 719,000

Project Coordinator

BEIA Consult International S.R.L
(Romania)

Project Partners

- INELSO (Turkey)
- Fraunhofer (Germany)

Project Website

<https://zerodeflect4pv.agile.ro/>

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ERA-Net Smart Energy Systems



This project has been funded by partners of the ERA-Net Smart Energy Systems (www.eranet-smartenergysystems.eu) and Mission Innovation (mission-innovation.net) through the Joint Call 2023. As such, this project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 883973.

ERA-Net
Smart Energy Systems
Joint Call 2023
(MICall23)

This project has been awarded funding within the ERA-Net SES Joint Call 2023 for transnational research, development and demonstration projects.

Key achievements:

Fault Diagnosis with AI:

Various algorithms and methods for fault diagnosis have been classified and evaluated based on potential fault scenarios, their characteristics, and impacts. These models enable precise detection and classification of PV faults that affect energy yields.

Innovative Sensor Integration:

Communication architecture, interfaces, and data structures have been thoroughly analyzed and defined. Innovative sensors developed by @INELSO enable monitoring at the module level and will soon be integrated into the Integrated Operation Center at @Fraunhofer IFF in the @Elbfabrik.

Holistic Energy Management:

System requirements have been assessed, functions, KPIs, layouts defined, and prototypes implemented. Intelligent algorithms ensure seamless integration of energy management and IoT systems, paving the way for predictive maintenance and maximum energy efficiency.

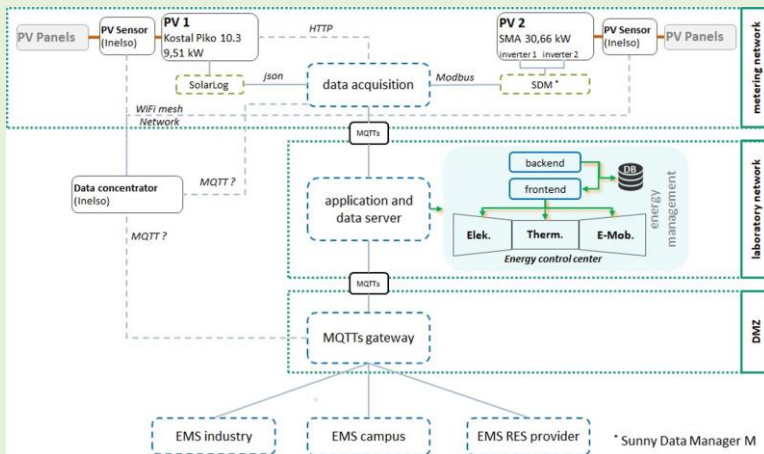


Fig 1. System architecture illustrating the integration concept of the German demonstrator within the Integrated Operations Center (IOC)



Fig 2 .Energy Management System platform and Geman pilot site

ZERODEFECT4V - Advanced Panel-Level Monitoring and Predictive Maintenance for Optimized Solar Plant Efficiency

Website Fraunhofer:

<https://www.iff.fraunhofer.de/de/geschaeftsbereiche/energiesysteme-infrastrukturen/zerodefect4pv.html>



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