Requirements Specifications

SAKURA-APM

Asset Performance Management System for grain processing industry SAKURA-APM,

PaaS SAKURA-IIoT based

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| --- | --- |
| **Organisation name** | **Type** |
| Centre 4.0 KPI DIH | DIH |
| INNOVINNPROM LTD | SME |

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Abstract

Our goal is to launch an Asset Performance Management (APM) system in the grain elevator segment based on the IIoT platform. To do this, we need to refine the existing solution (TRL7) using Digital Twin, AI & ML. SaaS SAKURA-APM is a new, unique product for the grain processing industry, which has no analogues in Eastern Europe.

APM will allow our customers to:

* optimize production and reduce quality losses;
* reduce elevator energy consumption;
* reduce production losses of elevators;
* reduce emissions.

Our strategy is to better adapt existing modern IoT-based solutions. It takes into account the latest innovations in the IIoT segment and offers a new business model that will improve economic performance and provide a new level of customer experience management.

The solution is adapted to the sectoral and local conditions of Eastern Europe and takes into account the following principles and their advantages:

* Democratization - from multilevel structure ERP/MES/SCADA to IIoT based APM.
* Accessibility - use of more affordable IoT devices (power meters, sensors, counters, etc.), application of Open Source & Cloud Technologies.
* Better experience management - available & supported own PaaS with new services and built-in Digital Twin, AI & ML technologies.
* Better efficiency - own model of accounting for quantitative and qualitative indicators of raw materials and products, own algorithms for assessing efficiency.
* Green transition - emission reduction, environmental product certification.

1. **Hardware specification**

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| --- | --- | --- |
| № | Component | Amount |
| 1 | Gateway Teltonika RUT956 | 1 |
| 2 | Power Meter INNOVINNPROM PKZM-3Pf4Ch | 3 |
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|  |  |  |

1. **Software specification**

| № | Component | Amount |
| --- | --- | --- |
| 1 | CAD Route InnoVinnprom 2.0.17 | 1 lic |
| 2 | Java 11.0.15 | 1 lic |
| 3 | NodeJS 16.15.1 | 1 lic |
| 4 | React 16.13.1 | 1 lic |
| 5 | Bootstrap 4.6 | 1 lic |
| 6 | Grafana 7.1.15 | 1 lic |
| 7 | Guacamole 1.1.0 or MeshCentral 0.9.61 | 1 lic |
| 8 | PostgreSQL 14.4 with TimescaleDB 2.7 | 1 lic |
| 9 | Spring boot 2.6 | 1 lic |
| 10 | Python 3 | 1 lic |
| 11 | Google Collab | 1 lic |
| 12 | PyTorch 1.11.0 | 1 lic |