



AIM-Plan

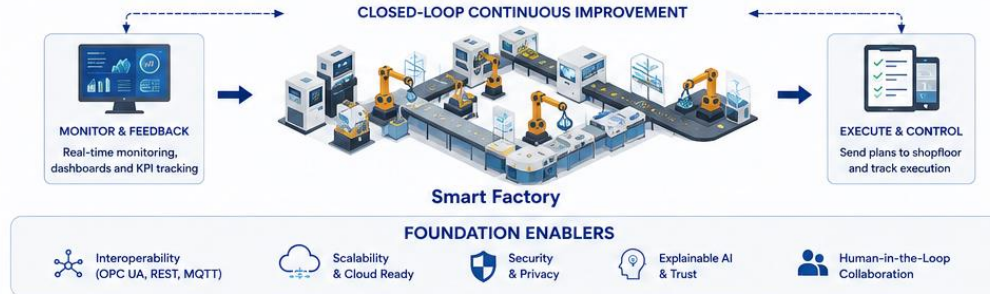
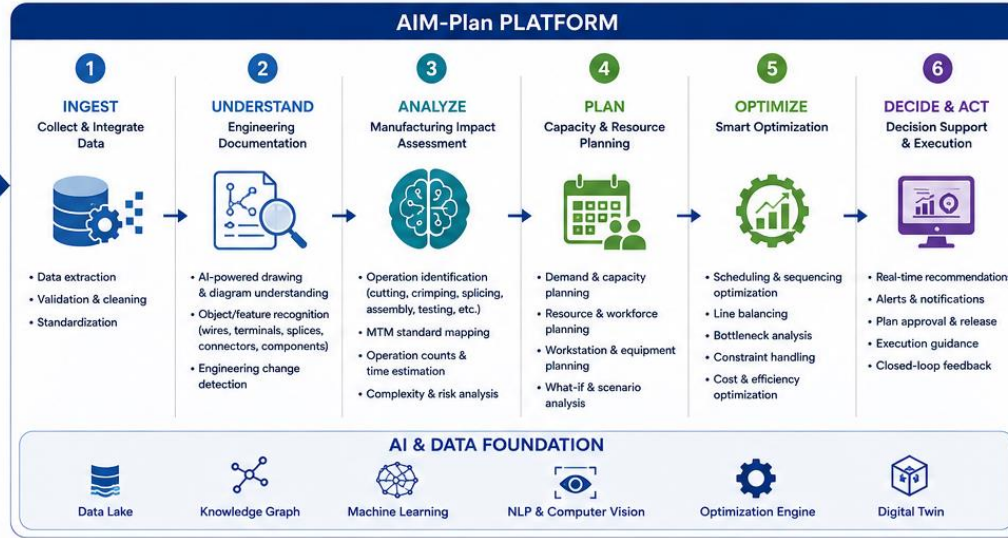
AI-Driven Engineering Intelligence for
Automated Manufacturing Planning



AIM-Plan

AI-Based Engineering Impact Assessment for Automated MTM and Capacity Planning

From Engineering Documents to Optimal Manufacturing Decisions



AIM-Plan: Smarter Engineering. Accurate Impact Assessment. Optimal Planning. Maximum Performance.

ORGANISATION PROFILE

Nursan Kablo Donanımları is a **100% Turkish-owned Tier-1 automotive supplier** with **48 years of experience** in **cable harness systems**.

The company operates **8 production areas in Türkiye and Bulgaria**, with approximately **7,000 employees** and **125,000 m² of total closed production area**.

Its main activities cover **automotive wiring harnesses, cable cutting and crimping, assembly, electrical testing, component and product design, and process/equipment design**.

Nursan has strong technical capabilities in **Industry 4.0, sustainability, production efficiency, validation, and automotive co-design**.

Its **R&D Center, approved by the Ministry of Industry and Technology in 2012**, has experience in TÜBİTAK-supported R&D projects, as well as an extensive patent, design, and scientific publication portfolio.

OEM



TEMESA

ISUZU



Otokar

TIER-1



aisin

DENSO

PROPOSAL INTRODUCTION (I)

- **Vision:** AIM-Plan aims to develop an **AI-based engineering impact assessment and manufacturing planning solution** that automatically analyzes engineering documentation such as **technical drawings, wiring diagrams, BOMs, and product specifications**, identifies required manufacturing operations, and converts this information into **MTM-based production time, workforce, workstation, equipment, and capacity requirements**.
- **Motivation:** In wiring harness manufacturing, new product quotations and engineering changes require experienced engineers to manually examine complex technical documentation and determine manufacturing operations. These operation counts are then manually entered into MTM spreadsheets to calculate production times and capacity requirements. This process is **time-consuming, knowledge-intensive, error-prone, and difficult to repeat whenever engineering documentation changes**. AIM-Plan is needed to automate and accelerate this engineering-to-production planning process while improving consistency and accuracy.
- **Content:** AIM-Plan will develop AI-based capabilities for the **automatic interpretation of engineering documentation**, including technical drawings, wiring diagrams, BOMs, and engineering specifications. The system will identify manufacturing features and operations such as **wire cutting, terminal crimping, splicing, assembly, and electrical testing**, determine their quantities, and map them to predefined **MTM standards**. The project will also develop automated calculation modules for **production time, labor requirements, workstation and equipment needs, and production capacity**, together with engineering-change impact analysis and decision-support functions.

PROPOSAL INTRODUCTION (II)

- **Expected outcome:** The project will deliver a **validated AI-assisted engineering and production planning platform** capable of transforming engineering documentation into structured manufacturing information and automated MTM calculations. Expected results include **automatic operation identification and counting, reduced engineering analysis time, fewer manual data-entry errors, faster quotation preparation, rapid recalculation after engineering changes, and more accurate workforce, equipment, and capacity planning.**
- **Impacts:** AIM-Plan will help automotive wiring harness manufacturers **shorten quotation and industrialization cycles, reduce engineering effort and planning costs, and respond more rapidly to customer requests and product revisions.** By digitally connecting engineering documentation with MTM and capacity planning, the project will support more accurate costing and investment decisions and create a scalable **AI-based engineering planning solution** that can potentially be extended to other labor-intensive and complex manufacturing industries.
- **Schedule:** AIM-Plan is planned as a **maximum 3-year (36-month) project.** The **exact start and end dates will be determined later**, in accordance with the SMART Cluster project timeline and consortium planning.

PARTNERS

Current Consortium:

TR: NURSAN, VBT Software AS, MetaLore

Partner search: Missing expertise

- Industrial end users from complementary manufacturing sectors such as white goods, aerospace, railway, industrial machinery, medical devices, battery systems, and electrical equipment, to validate AIM-Plan on additional engineering-document-driven manufacturing scenarios involving technical drawings, BOMs, product specifications, engineering changes, and production planning.
- Digital manufacturing technology providers offering PLM, CAD, Digital Twin, APS, factory planning, manufacturing simulation, or MES-related solutions, to integrate AI-extracted engineering knowledge, manufacturing operation identification, MTM calculations, and capacity-planning outputs into existing industrial engineering workflows.
- Research organisations with expertise in engineering document understanding, multimodal AI, manufacturing knowledge graphs, engineering ontologies, trustworthy AI, engineering change management, and AI validation, supporting the development and validation of reliable AI-based engineering impact assessment methods.
- Standardisation and interoperability partners with expertise in industrial data models and standards such as OPC UA, AutomationML, Asset Administration Shell (AAS), and Digital Product Passport, to enable interoperability between engineering data, manufacturing systems, and AIM-Plan services and support future industrial adoption.

Missing partner types:

- ind, sme, res, uni

CONTACT INFO

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