Product CarbonIQ
A Product Carbon Footprint System

ORGANISATION PROFILE

SISKON Industrial Automation and Software

- Founded in 1997

  Over 25 years of delivering cutting-edge software and industrial automation solutions to the manufacturing industry

- Locations
  - *Headquartes: Türkiye,*
  - *Ofices: Estonia, Romania*

- Team

  Skilled and dedicated workforce of 80+ professionals.

- Industry Expertise

  *Extensive experience as a leading **Industrial Software Developer**, specializing in advanced manufacturing solutions, process optimization, and automation.*

- International Project Experience

  ***4 global projects** currently implemented in **53 factories** across **44 countries**, transforming production processes on a global scale*

- Ranked among the **Top 10** software exporters in Turkey

- International Standards & Certifications
  - *ISO 9001:2015 Quality Management System*
  - *ISO 27001:2022 Information Security Management System*
  - *ISO 27701:2019 Privacy Information Management System*

- Products & Services
  - *Industrial Internet of Things (IIoT)*
  - *Machine, Production, Quality and Energy Data Collection*
  - *Traceability Solutions for Manufacturing*
  - *Machine and Process Automation*
  - *Cobot Systems*
  - *Industrial Imaging Systems*
  - *Bespoke Industrial Software Development*

- Research Pipeline & IP Portfolio
  - *National projects: 5 completed, 2 in progress*
  - *International projects: 1 labeled by Eurogia 2030 on May 2024*
  - *Patents: 2 approved, 11 in evaluation*
  - *Utiliy Models: 1 approved, 3 in evaluation*

ORGANISATION PROFILE

Faradai Limited

- Founded in 2017

- Locations
  - *Headquartes: United Kingdom,*
  - *Ofices: Turkiye, Singapore, Dubai*

- Industry Expertise

  By combining advanced machine learning and sustainability expertise, Faradai provides data management and intelligence tools to help large companies to decarbonise their business operations and supply chains.

- International Project Experience

  15+ Colloborative R&D Projects including Horizon 2020, Eurogia, Euroka, Innovate UK

Capture

Improve data capture across your business, reduce labour costs & increase accuracy.

Visualise

Achieve 360° visibility of your cloud connected portfolio from anywhere anytime.

Analyse & Act

Detailed analysis & insights to drive operational efficiencies & reduce emissions.

Sustainability Intelligence Platform comprises the following:

Data Management, Analaytics & Validation

Supports International Databases (IPCC, EPA, etc.)

One Platform for Multi-Sites

Target Tracking

ISO 14001, ISO 14064, GRI, CDP reporting compliant

Audit Management

ESG Reporting & compliance

PROPOSAL INTRODUCTION (I)

Vision

The goal of **Product CarbonIQ** is to empower manufacturing companies with a comprehensive solution that tracks, manages, and reduces the **carbon footprint of individual products across their lifecycle**. This will enable transparency and sustainability from raw materials to end-of-life disposal, contributing to global decarbonization efforts and meeting increasingly stringent regulations.

Motivation

- **Increasing Regulations:** Regulatory bodies are imposing stricter reporting requirements on product-level carbon emissions (e.g., EU's CSRD, CBAM, EU taxonomy).

- **Market Demand:** Consumers and clients increasingly demand transparency regarding the environmental impact of the products they purchase.

- **Decarbonization Challenge:** Carbon Impact is as important as price competition in products. Manufacturers want **intelligence to reduce product emissions, not just reporting**

- **Supply Chain Complexity:** Managing and reducing emissions across a product's lifecycle (including raw material sourcing, production, logistics, and disposal) is becoming essential to ensure **competitiveness in a global, sustainability-driven market**.

PROPOSAL INTRODUCTION (II)

Content

- **Life Cycle Assessment (LCA) Integration**
    - Boundary Definitions
    - Lifecylcle Phases Tracking
    - Compliance and Standards Integration & Reporting (ISO 14067, GHG)

- **Manufacturing Sustainability Data HUB**
    - ERP System Integration
    - Raw Material Consumption
    - Internal Material Movement
    - Waste and Scrap Movements
    - Product and Process Specific Energy Allocation
    - In-Factory Transportation Tracking

- **Supply Chain Intelligence**
    - Supplier Data Collaboration
    - Supply Chain Emissions Assessment (AI)

- **Product-Specific Carbon Footprint Calculation**
    - Compherensive Emission Databases (collobration with EcoInvent, Climatic, IPCC databases)
    - Streamlined Product Emission Calculations
    - AI-Based Emission Factor Assignment (LLM)
    - Automatic Logistics Rooting Data Analysis
    - Real-time Automated Carbon Calculations
    - Data Quality and Uncertainty Analysis

- **Sustainability Intelligence Layer**
    - Scenario Analysis and Reporting
    - Hot-Spot Analysis
    - Product Life Cycle Decarbonization

PROPOSAL INTRODUCTION (III)

Expected outcome

- **Streamlined Product Carbon Footprint Calculation:**
    - Autonomy for Emission Data Management (IoT & MES Integrations, Logistic Data Analysis)
    - AI-Based Emission Activity Categorization (matching emission factors for services and materials)
- **Reduced Product Emissions:**
    - Identification of key emission sources to prioritize and optimize investments
    - Reduction in energy consumption, material waste, and transportation-related emissions
- **Improved Supply Chain Efficiency:**
    - Collaborative Supply Chain Management
    - Supply Chain Optimization
    - Reduction in upstream and downstream emissions through logistics optimization
- **Enhanced Competitive Advantage:**
    - Carbon-efficient products, positioning companies as market leaders in sustainability and innovation

PROPOSAL INTRODUCTION (IV)

Impacts

- **Market Leadership in Sustainability:** Companies that adopt product-level carbon management will stand out as pioneers, attracting environmentally conscious customers and partners.
- **Regulatory Compliance:** The project will prepare companies for upcoming regulations on product-level carbon reporting, reducing the risk of penalties and non-compliance.
- **Cost Optimization:** By reducing emissions, manufacturers will also decrease costs associated with energy consumption, material waste, and inefficiencies in logistics.
- **Increased Brand Value:** Products with low carbon footprints will appeal more to customers and investors, potentially increasing market share and brand loyalty.

Schedule:
- Start: January 2026
- Duration: 24-30 months

PARTNERS

- **Siskon Industrial Automation and Software, Türkiye**

  A premier engineering company with over 25 years of experience dedicated solely to the manufacturing industry, specializing in leading solutions for industrial automation, IIoT, product traceability, and bespoke industrial software development, offering tailored innovative systems empowering manufacturers to achieve real-time production visibility and operational efficiency.

- **Faradai Limited, UK**

  A technology company specializing in energy management and sustainability solutions. It helps organizations monitor, analyze, and optimize their energy usage and environmental impact, aiming to improve operational efficiency and reduce carbon footprints across industries.

- **Ermetal A.S., Türkiye**

  A key player in the sub-industry of the world's leading automotive manufacturers and ranks among Turkey's 500 largest industrial enterprises. Ermetal is recognized for its contributions to the automotive sector, particularly in metal part production and assembly.

- **Time Reactor Artificial Intelligence Solutions, Türkiye**

  A technology startup specializing in cutting-edge time series solutions with a focus on anomaly detection and forecasting. With a strong emphasis on the manufacturing and financial sectors, it delivers AI-driven insights that enhance operational efficiency and predictive capabilities.

Partner Search
- Industrial Partner from UK

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