

# MELSS

Enabling you to stay ahead of time



## Digital Technology Solutions

Your Partner in Digital Transformation

[www.melss.com](http://www.melss.com)

Traceability  
Internet-of-Things (IoT)  
Mistake Proofing  
Digital Factory

## Digital Transformation Offerings



### Operational Excellence

- Process Digitalization & Automation
- Shop Floor Digitalization
- Material Traceability

## Smart Manufacturing Solutions

### Asset Tracking & Maintenance Management

- Product Traceability & Tracking
- Asset Lifecycle Management
- WIP Inventory Management

### Mistake Proofing (Poka Yoke)

- From Suppliers to Inventory Management
- Raw Materials to Finished Goods Management

### Shop Floor Digitalization & IoT

- Job Card Digitization
- Machine Monitoring (OEE)
- Operator Efficiency
- Product Tracking
- Machine Breakdown
- Energy Monitoring
- Condition Monitoring

### Environment Monitoring

- Ambient Temperature
- Relative Humidity
- Air Quality Index through VOC
- Particulate Matter

### Traceability

- Equipment Monitoring
- Digital Checklist Solution
- Predictive Maintenance
- Preventive Maintenance

## Digital Skill Set

Internet-of-Things

Mobile App

Data Analytics

Web App

Cloud & On-Prem



Traceability is critical in modern manufacturing, providing full visibility from raw materials to finished goods. Our system delivers complete 4M traceability—tracking Man, Machine, Material, and Method—and generates detailed Genealogy Reports for compliance, quality control, and recall readiness.

## Key Features & Benefits

- 4M Traceability with Genealogy Dashboard
- Real-Time Monitoring & Role-Based Audit Trails
- Seamless ERP/MES/SCADA Integration

- Fast Root Cause Analysis & Defect Isolation
- Supports ISO, IATF & FDA Compliance
- Minimizes Product Recalls & Ensures Quality Control



### Machine Traceability (Machine)

- Logs machine ID, usage data, and calibration
- Captures process parameters from PLC/SCADA
- Highlights machine-specific issues or anomalies

### Operator Traceability (Man)

- Records who performed which operations
- Operator login, ID capture, shift tracking
- Skill level and authorization logging.

### Method Traceability (Method)

- Captures SOP version and process settings
- Detects deviations or overrides
- Records changes in process methods

### Component & Material Traceability (Material)

- Tracks parts/raw materials via batch or serial number
- Integrates barcode/QR/RFID scanning
- Monitors material flow across stores and shop floor.

## Mistake Proofing

Eliminate errors before they happen with our Sixdime MES mistake proofing features. Ensure consistent quality and reduce rework through intelligent process validation and automated checks.

## Supply Chain Integration

Seamlessly connect your manufacturing operations with downstream supply chain partners with Sixdime MES. Improve visibility, reduce lead times, and enhance customer satisfaction.

Sixdime OEE is a powerful, industry-adaptable solution designed in collaboration with domain experts. It empowers manufacturers with real-time insights to optimize performance, minimize downtime, and deliver consistent quality.



## Why Choose Sixdime OEE?

- Identify hidden production losses before they impact output
- Maximize equipment utilization and operational efficiency
- Gain real-time visibility into plant-floor operations

## Key Features

- Availability – Track planned vs. actual runtime
- Performance – Monitor speed vs. ideal cycle time
- Quality – Capture good units vs. rejects with reasons
- Loss Analysis – Identify breakdowns, changeovers, defects
- Dashboards – Real-time OEE, trends, and reports.

## Benefits

- Improve throughput and reliability
- Reduce operational cost and rework
- Enhance product quality and consistency
- Drive data-backed strategic decisions
- Ensure sustainable, continuous improvement

## How Sixdime OEE Works

- Seamless integration with MES systems & IIoT devices
- User-friendly dashboards and reports for instant decision-making
- Advanced tools for preventive maintenance, RCA, and SMED
- Continuous improvement support through operator accountability

**Connected Industry**  
with Sixdime Internet-of-Things!



## sixdime AndonBox

The Sixdime AndonBox is a simple solution to display rich content from any web-based screen on an external display, without having to setup PCs, thin clients or other display drivers.

Working Voltage & Current	5V 2 Amps
Dimensions (l x b x h)	127 x 70.7 x 35.5mm
Interfaces	Ethernet, WiFi
Display Interface	Micro HDMI
Operating temperature	0 – 50 °C ambient
Web Browser	Google Chrome



## Use Case

- Production Monitoring & OEE Dashboards
- Andon Alerts & Escalation Display
- Shift Targets & Performance Visualization
- Digital Work Instructions & SOP Display
- Quality Alerts & Issue Broadcast
- Maintenance Status & Breakdown Notification

## Applications

- Display real-time production and performance data
- Eliminate need for PCs or thin clients for display
- Enhance communication across shop floor and warehouse

## sixdime NFC Reader

Sixdime NFC reader supports Industry 4.0 by enabling identification, validation, and data capture on shop floors and assembly lines. Compact yet powerful, it reads Mifare and NTAG tags and easily IoT-enables shop floors. With Wi-Fi and Ethernet connectivity, it integrates seamlessly with software, PLCs, and industrial controllers via Modbus TCP for fast, reliable communication.

Working Voltage & Current	5 Volts ; 2 Amps
Dimensions (l x b x h)	127 x 70.7 x 35.5 mm
Tags supported	Mifare tags, NTAG 2xx
Sensing Distance	25 to 30 mm
Interfaces	Ethernet/Wi-Fi
Indications	Tag read indication

### Use Case

- Tracking & Traceability for parts, operators, and processes.
- Poka Yoke / Mistake Proofing to prevent errors in production.
- Part Identification with NFC tags for quick validation.
- Single Piece Flow enforcement in assembly lines.
- Operator Authentication & Authorization for secure shop floor access.
- Presence & Absence Verification to ensure process compliance.

## sixdime Pik2Lite

Pick-to-light is a technology used in warehouses and distribution centers to improve the accuracy and efficiency of order picking processes. It involves using a system of lights and indicators to guide workers in picking items from their designated locations.

### Features

- Improved productivity
- Auto re-routing, efficient power control & traceability
- Consistent data flow – single PTL node failure doesn't disrupt process
- Easy replacement & configuration via plug & play
- Touchscreen-enabled controller for quick operation
- Smart and Secure Pick

No of Devices supported per Controller	120 Devices
Data Security	AES128, SHA 256, TLS1.2
Picking Operation	Parallel, Sequential, Kit, Lot
Mounting	Flange, Clamp
Operating Temperature	0° to 50°C
Mode of Acknowledgement	Push Button, Sensor, Remote
Dimensions (l x b x h) - Pik2lite/Controller	150mm X 40mm X 33mm/ 218mm X 107mm X 45mm

### Use Cases

- Prevents manual stock entry errors by real-time tracking
- Maintains accurate stock levels for spare parts, raw materials, or finished goods
- Provides data insights on usage trends for better planning & forecasting



### Applications

- Enable operator and tool identification on shop floor
- Capture and validate production data instantly
- Integrate easily with PLCs and software via Modbus TCP/profinet/Ethernet/IP
- Support Industry 4.0 with compact, IoT-ready design



### Applications

- Warehouse and Distribution Centers
- Kitting Operations in Manufacturing and Automotive
- Efficient and Quick picking for Retail and E-Commerce
- Guided Assembly

## sixdime EdgeBox

The Sixdime EdgeBox is a flexible IoT end point enabling easy machine monitoring and signal exchange. Ideal to implement interlocks for Mistake Proofing, Traceability, Single Piece Flow and Overall Equipment Efficiency.

Working Voltage & Current	24 Volts DC & 2 Amps
Dimensions (l x b x h)	155 x 95 x 48 mm
I/O	4 Digital Inputs / 4 Digital Outputs
Interfaces	4 USB, 1 Ethernet, WIFI, Bluetooth, RS485/RS232
Display	20 x 4 character (Green) LCD 4.6 x 1.5 inch
Operating temperature	0 – 50°C ambient
User Interaction	4 Programmable Function Buttons 3 Configurable Indication LED
Operating System	Linux
Application Programming	Python & NodeRed
PLC Communication	Siemens S7, Ethernet/IP, Modbus TCP, MBUS, MS/TP, BAC net/IP
Digital IO Expansion	Upto 36 DI on multiples of 12 DI

### Use Cases

- Real-time machine monitoring for predictive maintenance.
- IT-OT integration with MES/ERP/SCADA systems.
- Automated data capture to boost accuracy and efficiency.

## sixdime Swas

Sixdime Swas is an advanced Indoor Air Quality monitor that measures Particulate Matter (PM1, PM2, PM4, PM10), Volatile Organic Compounds (VOCs), Nitrogen Oxides (NOx), Relative Humidity, and Temperature. It features configurable sampling for precise self-calibrated readings and transmits real-time data via WiFi/GSM making it effective for enhancing indoor air quality and adhering to international standards.

Sensing Temperature	10 to 50 °C
Humidity (RH) (non condensing)	0 - 90 %
VOC and NOx Index	1 - 500
Particulate Matter	10µm (PM1.0, PM2.5, PM4, PM 10)
Sampling Interval	1 sample per second (Configurable range (1 to 1440) in minutes)
Data Interface	WIFI/GSM/Ethernet 100BaseT
Visual Indication	2.4" Color OLED Display

### Use Cases

- Monitor room temperature & humidity for HVAC optimization
- Maintain required humidity/temperature levels in pharmaceuticals, electronics & textiles.
- Detect dust levels to ensure clean storage of sensitive goods



### Applications

- Control and Monitor Industrial Process
- Seamless Integration between OT/IT
- Comprehensive data acquisition from Legacy Systems



### Applications

- Environment and Condition Monitoring
- Monitor and Improve IAQ inside Plant
- Regulatory Compliance
- Control and minimize Emission of harmful pollutants

The Sixdime Hertzor detects and analyzes machine vibrations across various industries to prevent potential issues and failures. It measures acceleration, velocity, and displacement using a high-resolution sensor across six axes. The device communicates with software via Wi-Fi/BLE for real-time monitoring and historical analysis. It is capable of predicting faults based on pre-trained tiny Edge AI/ML model.



Sensing Temperature	10 to 80 °C
Acceleration Range	±2/±4/±8/±16 g
Angular Velocity	±125/±250/±500/±1000/±2000 dps
Sampling Interval	1 sample per second (Configurable range (1 to 1440) in minutes)
Data Interface	WiFi (IEEE 802.11 b/g/n )
Sensor Operating Voltage	24V / 1A DC (Optional Battery Backup)
Polycarbonate	50 X 52 X 35 mm (IP52)
Condition Monitoring	Float form imbalance, bearing wear & tear, shaft misalignment/anamolies

## Applications

- Reduce downtime and maintenance cost
- Measure and monitor the fault detection (Anamaly Detection)
- Monitor the machine condition from remote places
- Improve safety and machine performance

## Use Cases

- Detects early signs of faults (bearing wear, imbalance, misalignment, lubrication failure).
- Reduces unplanned downtime and production losses
- Extends equipment lifespan by preventing severe damage

## Our Customers



NOKIA



KOHLER.



MELSS offers customised turnkey automation lines and production systems for Manufacturing, Assembly, Testing and Packaging. These include electro-mechanical systems including Material Handling Systems, Robotics, Sensors, Instrumentation and Software.



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