Wireless Sensor Networks
WelCOM
for Engineering Asset Life Cycle Optimal Management

http://welcom-project.ceti.gr

Wel**COM**
Wireless Sensor Networks
for Engineering Asset Life
Cycle Optimal Management

WelCOM Concept for Condition-Based Maintenance

The WelCOM project offers a new platform and tools to facilitate the implementation of a Condition – Based Maintenance (CBM) Strategy. Condition Monitoring (CM) is performed via a flexible toolset of solutions based on Wireless Sensor Networks (WSN). Thus, maintenance – related data and services become ubiquitously and transparently available at anytime, anywhere and to anyone authorised to have access to them, which is the key concept for implementing e-Maintenance. To this end, WelCOM delivers a complete set of on-site and remote hardware infrastructure supported by software tools that enable maintenance personnel to efficiently plan and implement a Condition – Based Maintenance (CBM) program. The WelCOM platform is flexible and customizable in order to adapt and operate on top of diverse plant installations and equipment profiles.

WelCOM Delivers

e-Maintenance platform facilitating modular services to support maintenance processes:

- Diagnostics support and management of maintenance-related knowledge
- Maintenance activities support with e-training and mobile on the spot assistance.

A flexible sensing infrastructure, incorporating wireless sensor networks and software libraries for monitoring services supporting:

- Monitoring profile customization.
- Sample filtering.
- Measurements visualisation and analysis.
- Event detection.

WelCOM Benefits

- Employ wireless technologies to enable flexible condition monitoring.
- Empower staff to contribute to and benefit from capturing field knowledge.
- Maximise the performance of Asset Management.

WelCOM Platform & Subsystems

WelCOM-IMA

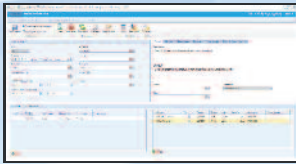**Intelligent Maintenance Advisor**

An enterprise web platform that leverages management and enrichment of maintenance knowledge.
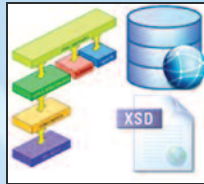
Intelligent Maintenance Advisor

A mutli-user environment that provides maintenance action support to staff and facilitates sharing of field expertise.

CMMS (*Integration*)

CMMS External System
Exchange information for maintenance planning and work order prioritization.
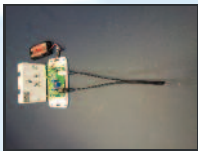
WelCOM-DB Model

WelCOM Data Management
A flexible model adopting and extending the semantics of established maintenance schemas.

WelCOM-Training Portal

WelCOM Training Portal
An e-training platform integrated with a maintenance-support mobile application.

WelCOM-WOS

Wireless Optical Sensor

Prototype wireless optical sensors based on low cost customizable optical fiber platform for diverse applications' monitoring.
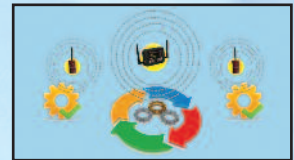
WelCOM SENSE-MI

WSN Management Client

Client software to configure the sensing infrastructure and analyze the parameters history.

WelCOM-WSN

Smart Sensors

Embedded filtering and pre-processing of parameters, configured as intelligent monitoring profiles.

Industrial Validation

Production Machinery

Monitoring of critical production equipment.

Product Installations

Remote product installations monitoring.

The Partnership

Project - coordinator

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