



# Installing a CMMS for a Renewables based business

E.ON UK Renewables Asset Management  
October 2006  
Paul Davies

# E.ON UK's Asset Management system

## 2000

- E.ON investigate central Asset Management in one system

## 2001

- Maximo introduced across Coal, Gas and Hydro-Electric stations + and support structure (Pipelines, Bulk terminal etc)
- CMMS dynamically interfaced to QSP (e5 Financials)

## 2003

- Investigated incorporating Wind Farms into the CMMS

## 2004

- Process and asset structures for Wind Farms and Hydro designed and rolled

## 2005

- Internet access rolled out to external service providers
- Wind Turbine Safety Rules introduced
- Excel / ODBC reporting
- CIP process underway
- Centralised SCADA system for Renewables (Aeolus)

## 2006

- Asset performance reporting
- Reporting using IBM Business Objects
- Hand Held Units
- PPT for Aeolus
- Documentum links

# Statistics about E.ON UK's CMMS

## Users

- 1,200 users across UK
- 60 users in Renewables

## Assets

- 240,000 assets in database
- 15,000 assets in Renewables

## Work Orders

- 80,000 Work Orders per annum
- 4,000 Work Orders for Renewables

## Purchasing

- 11,500 Purchase Orders per annum

# IMPLEMENTATION DESIGN **What we want from the system**

## **Objectives**

- Integrated asset management system
- Easy to operate (KISS principle)
- Management information about state of our assets, generation achieved and downtime suffered
- Structured repository for documentation about the assets
- Manage the flow of work on the assets
- Ensure that HSE requirements (RA, MS, COSHH etc, WTSR, E&MSR) are recorded & adhered to
- Ensure a system of PPM based on our I & M Policies and OEM recommendations is in place

## STRATEGY for SUCCESS

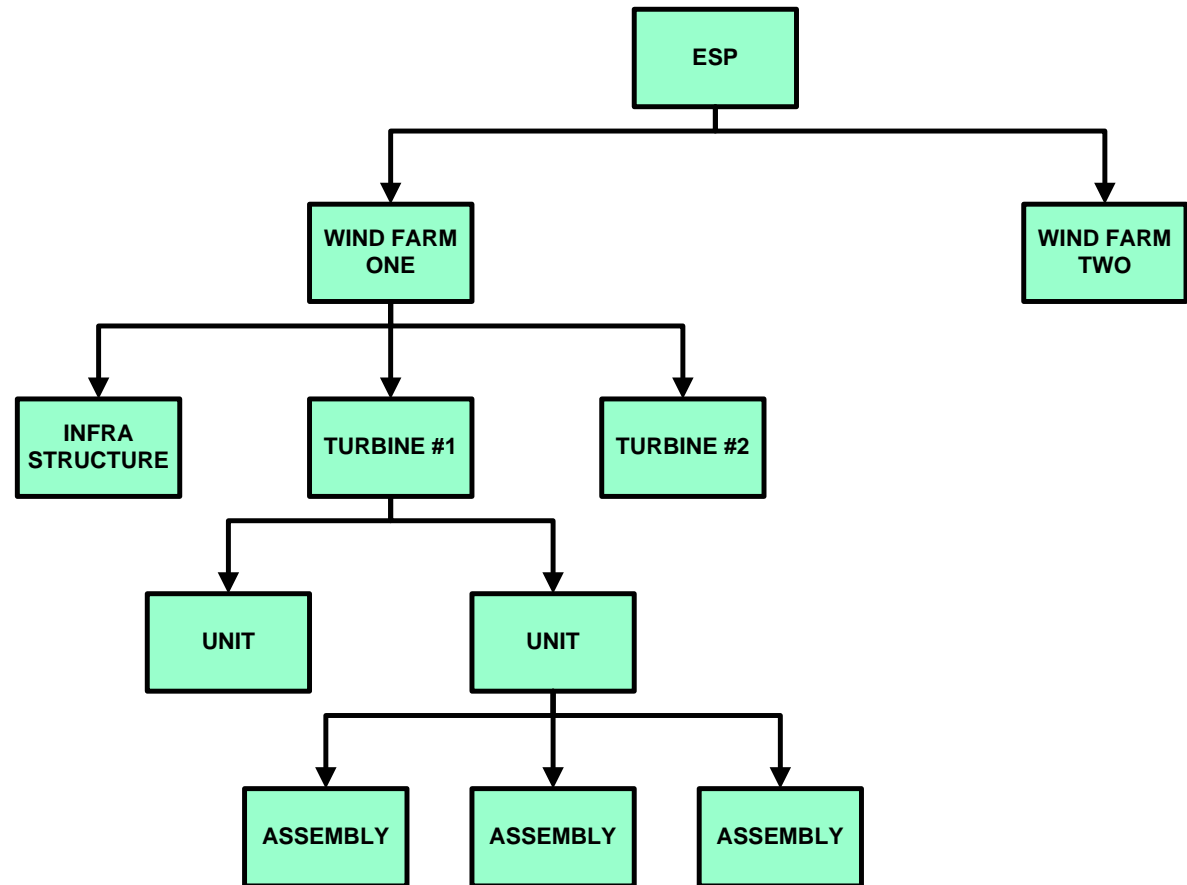
## How will the system work

- Management buy-in
- Planning and Design
- Simple Strategy – 3 parallel bridges: IT - DATA - PEOPLE
  - Hardware / Software
  - Data Takeon
  - Work Management Process
- GO LIVE
  - Post Implementation support
  - Reporting and feedback
  - Continuous Improvement Plan (CIM)

# DATA STRUCTURES

## Asset Hierarchy (5 levels)

- 5 level hierarchy
- Grouped under ESP
- Individual Turbines
- Built in Operating Locations



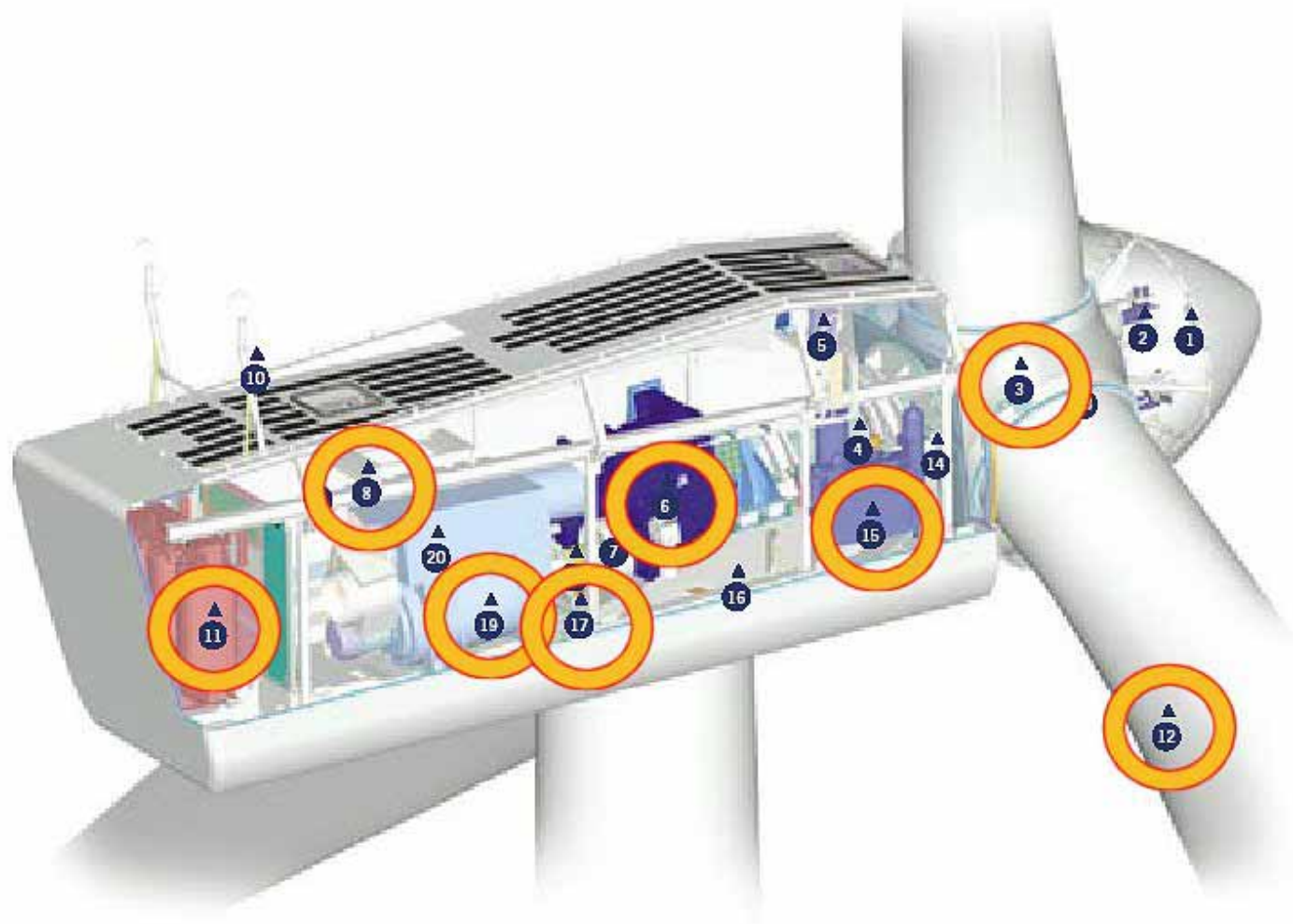
# EQUIPMENT ASSETS

## Rotatable Assets

- 12 Blade
- 19 Generator
- 6 Gearbox
- 17 Yaw Motor
- 3 Blade Hub

## Other Assets

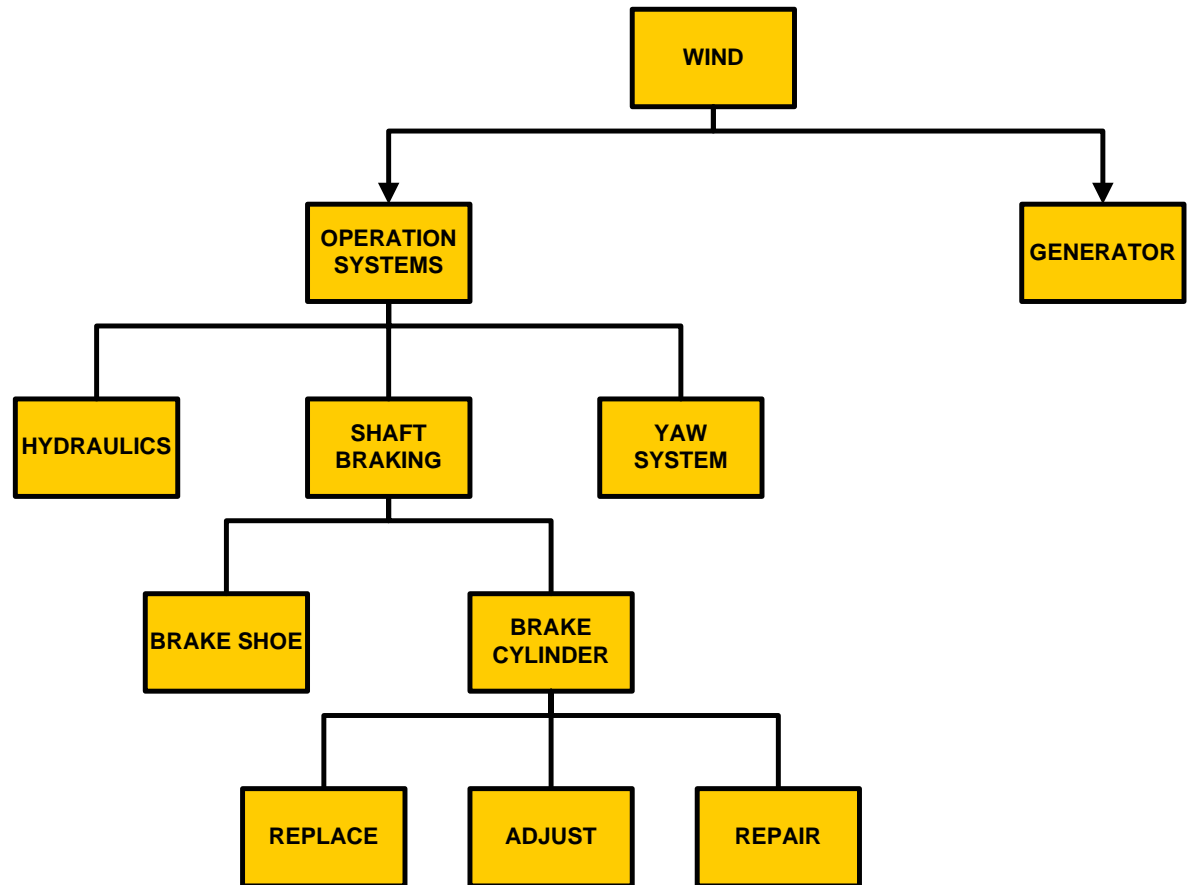
- 8 Service Crane
- 11 Transformer
- 15 Hydraulic Unit



# DATA STRUCTURES

## Failure Hierarchy (5 levels)

- FAILURE
- CLASS
- PROBLEM
- CAUSE
- REMEDY



# Maximo and our Work Management Processes

## Wind Turbine Safety Rules (WTSR)

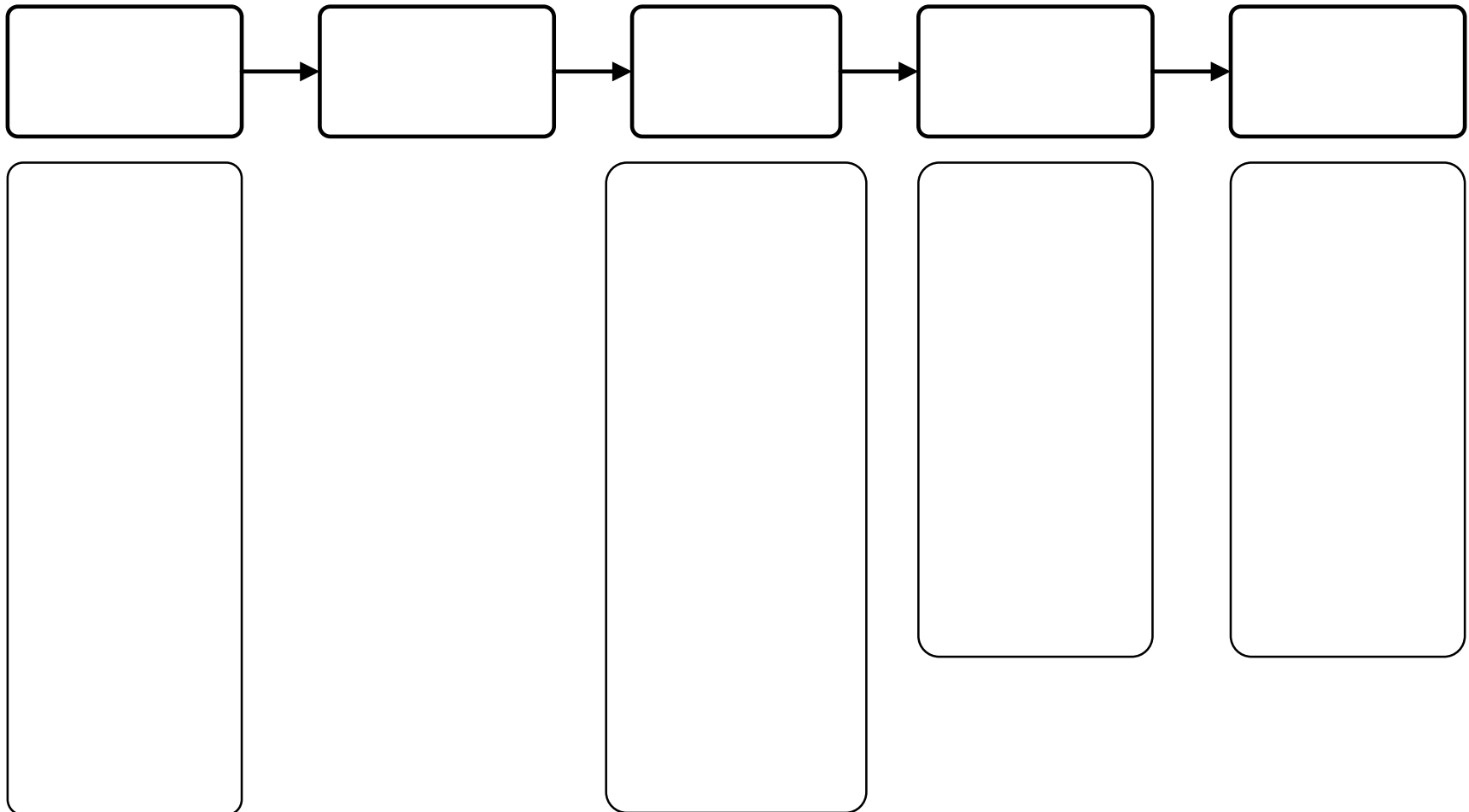
- Developed and implemented WTSR – provided the lead for the UK Wind Industry (Owners, Managers and Suppliers)
- Work Management Process is fully compliant with WTSR

## CMMS and WTSR

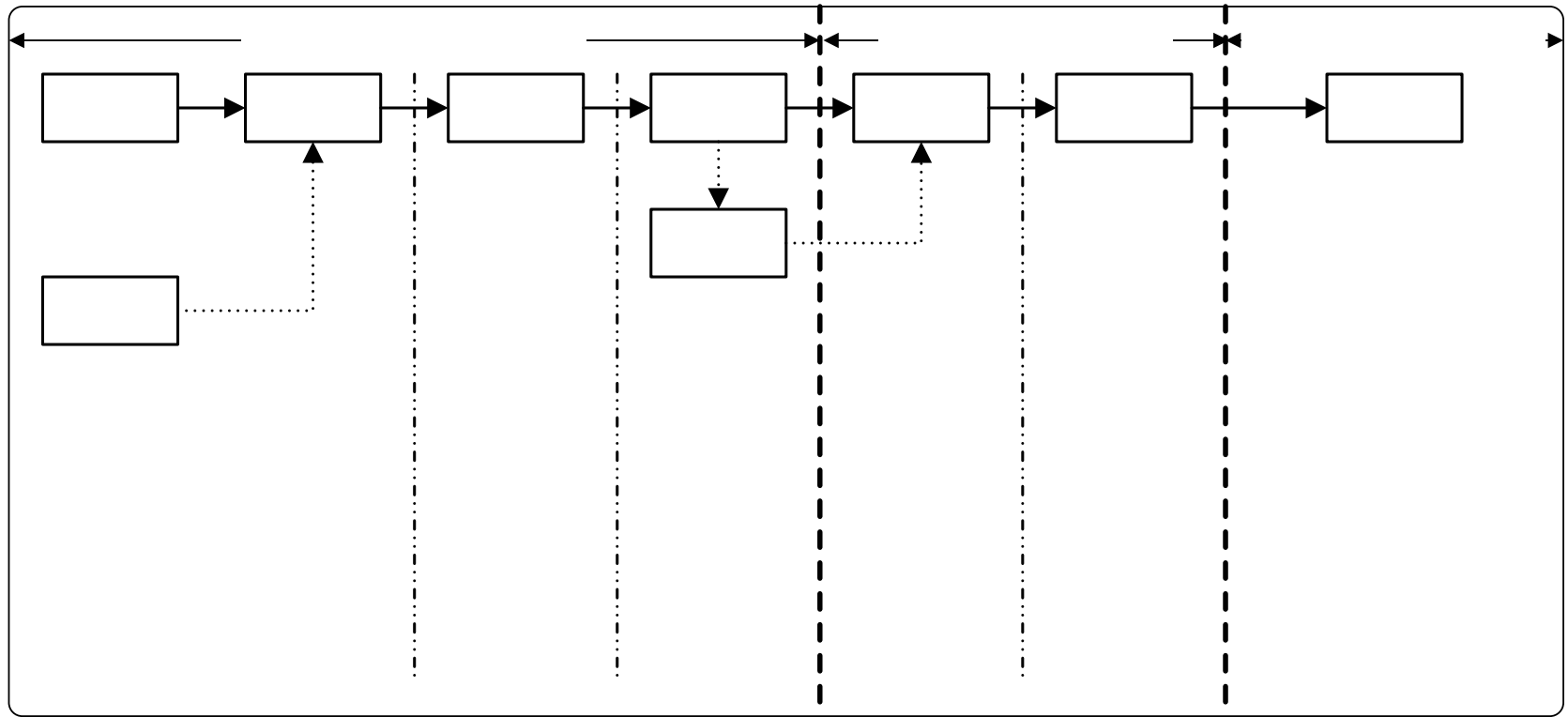
- Our CMMS training and mentoring ensures that all operatives work within the process and thus the WTSR

# CMMS WORK ORDERS

Service provider / site manager



# OVERVIEW OF WORK ORDER STATUS PROGRESSION



← WOs Raised and Managed by **ESP** →

Rheidol **CCR** liaise with **ESP**

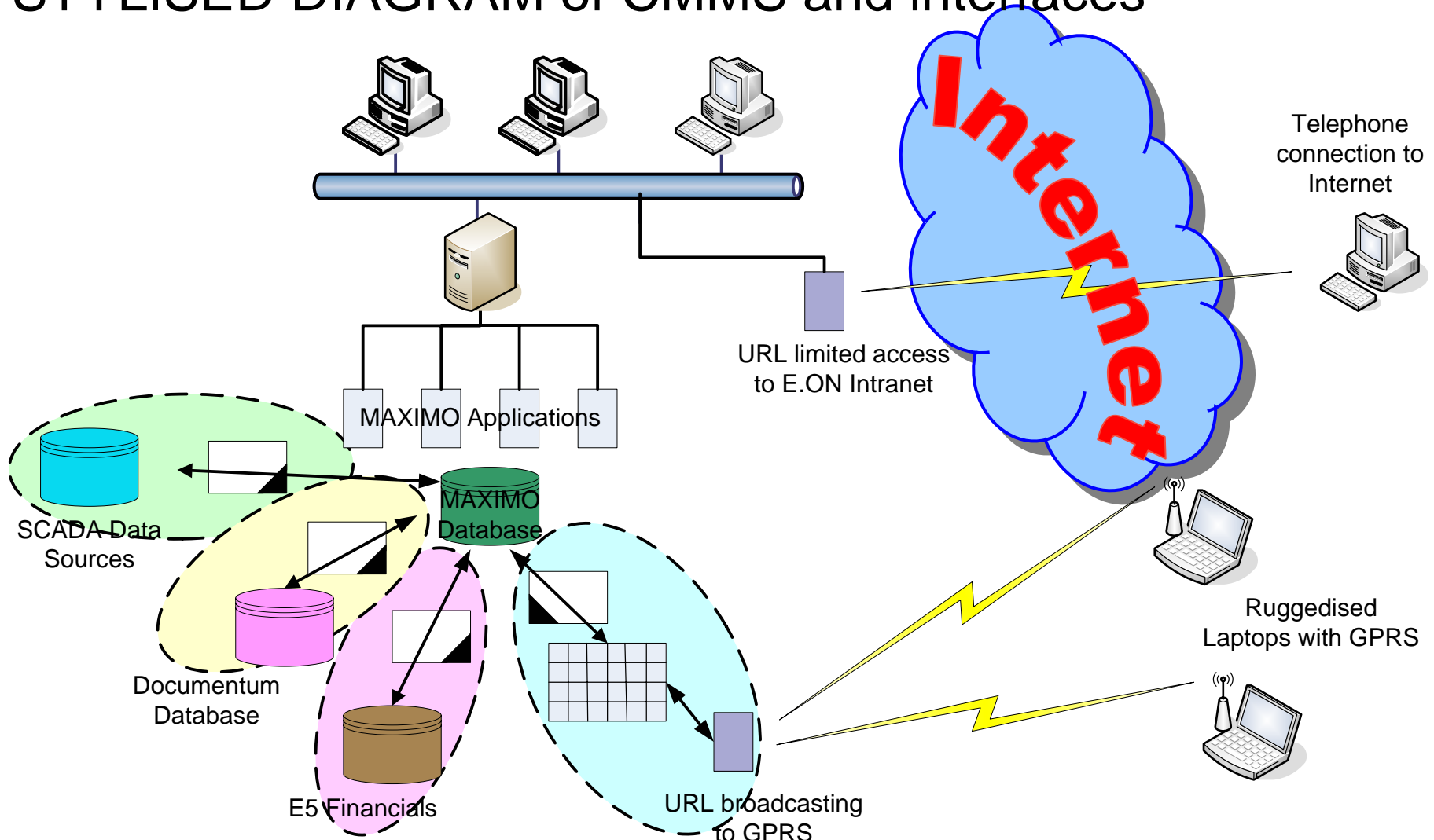
**ESP** "deprograms" WO

**AL** liaises with **ESP** to **CLOSE** WO

Process

**ASSESSMENT**

# STYLISTED DIAGRAM of CMMS and interfaces



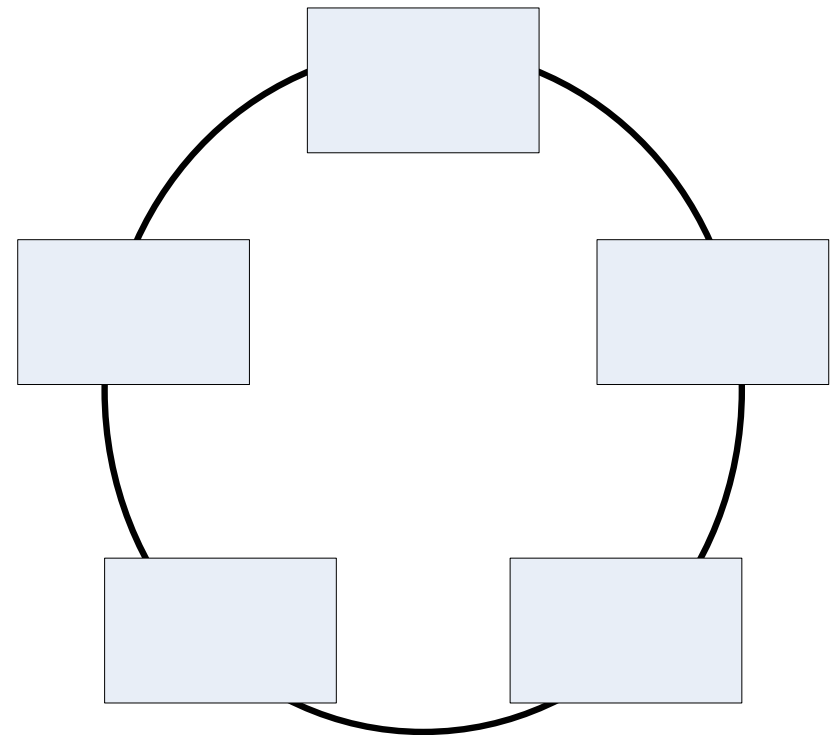
# CONTINUOUS IMPROVEMENT PLAN

## Reporting

- Management of External Service Providers
- Conformance with Work Management process & WTSR
- Fault Management reporting
- PPM conformance

## CIP process

- Analysis
- Improvement



**Thanks for your time  
& participation!**