SUPPLY CHAIN: AN INTEGRAL PART OF THE ASSET LIFECYCLE
IFS APPLICATIONS SOFTWARE NUMBER ONE IN ENTERPRISE ASSET MANAGEMENT FOR OIL AND GAS

IFS, the global enterprise applications company, has been identified as the number one vendor globally in enterprise asset management (EAM) software for the oil and gas industry by ARC Advisory Group, the leading information technology research and advisory firm for industry and infrastructure.

ARC Advisory Group, in its new publication “Enterprise Asset Management and Field Service Management, Five Year Market Analysis and Technology Forecast through 2015,” indicates that IFS Applications holds a dominant market share position in oil and gas globally. The IFS Applications EAM suite is used widely by engineer, procure, construct (EPC) contractors serving the industry, by oil field service companies, and even by upstream oil and gas producers worldwide.

“The asset intensive oil and gas industry has many project-driven improvements with tight turnaround schedules to minimize downtime,” ARC Advisory Group Research Director Ralph Rio said. “Assets are often being altered through upgrades, retrofits, overhauls and other projects for asset lifecycle extension and productivity improvement. Project management and real-time visibility have become key needs in EAM software.

“Project management and asset integrity management are both critical concerns for our customers in the oil and gas industry,” Director of the IFS Oil & Gas industry team, Carl-Magnus Adamsson said. “This means that an integrated solution that handles not only maintenance functions but all phases of the asset lifecycle is required. IFS Applications is unique in delivering a solution that handles the asset lifecycle, from asset planning and engineering, through construction, commissioning, operation and maintenance all the way through refits, lifecycle extensions and eventual decommissioning and replacement. The industry has already seen the problems that result when asset data is not organized and well managed. There is a renewed interest in ensuring that everyone is operating from one set of asset data so good decisions can be made to ensure asset integrity.”

For more information on ARC’s findings, visit http://www.arcweb.com/Research/Studies/Pages/EAM.aspx to view an overview or obtain the full length report.
IFS RECEIVES ORDER FOR IFS APPLICATIONS FROM MAERSK

IFS, the global enterprise applications company, announces that Maersk Drilling and Maersk Supply Service have chosen IFS Applications. The contract includes licenses and services worth USD 11.5 million.

Maersk Drilling and Maersk Supply Service are global leaders in the oil & gas and offshore marine services industries. To streamline business processes and optimize efficiency, Maersk Drilling and Maersk Supply Service decided to implement IFS Applications as their global ERP solution.

The IFS solution purchased by Maersk includes components for financials, project management, supply chain management, and maintenance.

The implementation will start immediately.
BEFORE WE START........
ASSET MANAGEMENT

DEFINITION

THE SYSTEMATIC AND COORDINATED PRACTICES THROUGH WHICH AN ORGANIZATION OPTIMALLY AND SUSTAINABLY MANAGES ITS ASSETS AND ASSET SYSTEMS, THEIR ASSOCIATED PERFORMANCE, RISKS AND EXPENDITURES OVER THEIR LIFE CYCLES FOR THE PURPOSES OF ACHIEVING ITS ORGANIZATIONAL STRATEGIC PLAN.
Figure 4 – Overview of the asset management system, its relationship to the organizational strategic plan and stakeholder expectations

ASSET MANAGEMENT SYSTEM STRUCTURE

LEGAL AND STAKEHOLDER REQUIREMENTS AND EXPECTATIONS
(customers, shareholders, regulators, employees, suppliers, society)

OTHER ORGANIZATIONAL REQUIREMENTS AND SYSTEMS

ORGANIZATIONAL STRATEGIC PLAN

PAS 55 ASSET MANAGEMENT SYSTEM

ORGANIZATIONAL VALUES, FUNCTIONAL STANDARDS, REQUIRED PROCESSES

ACQUIRE/CREATE
UTILIZE
MAINTAIN
RENEW/DISPOSE

PORTFOLIO OF ASSET SYSTEMS AND ASSETS
(diversity of types, criticalities, condition and performance)

ASSET MANAGEMENT POLICY

ASSET MANAGEMENT STRATEGY
ASSET MANAGEMENT OBJECTIVES
ASSET MANAGEMENT PLANS

CONTINUOUS IMPROVEMENT

PERFORMANCE AND CONDITION MONITORING

ASSET MANAGEMENT ENABLERS AND CONTROLS

FIGURE FROM PAS 55-1:2008, BRITISH STANDARDS INSTITUTE, SEPT 2008
THE LIFECYCLE OF A FACILITY

1–5 years
DESIGN/ REDESIGN

30–60 years
OPERATION AND MAINTENANCE

<5 year
DECOMMISSIONING
SCRAPPING
CREATION OF FACILITY INFORMATION

- Drawings
- Documents
- Equipment information
- BOM
- Control System Info
- Tag & Tag structures
- Safety Instructions

Legend:
- Design/Redesign
- Operations
- Decommission
COMPLETE LIFECYCLE SUPPORT

PROJECT

ENGINEERING

ASSET

OPERATE

IMPLEMENT

PREPARE

ASSET DESIGN

INVESTMENT PLANNING

PROJECT PLANNING

PROCUREMENT & SUB CONTRACT

CONSTRUCTION

INSTALLATION

COMMISSIONING

FEEDBACK

ANALYSIS

IMPROVEMENTS

CONTRIBUTE

COMPLETE LIFECYCLE SUPPORT
HOW CAN ALM IMPACT AND IMPROVE SUPPLY-CHAIN?
Which Assets use this Spare?

Which Spares for this Part Classification?

Which other Classifications use this Spare?

Which Assets are of this Classification?

Which Assets use this Spare?
USING THIS DATA EFFECTIVELY....
SOURCES OF DEMAND

KNOWN DEMAND

PM Action

- Planning Schedule
- Permits
- Asset(s)

- Tool and Facility Requirements
- Tasks & Resource Requirements
- Purch & Mat'l Requirements

JUST IN TIME IS FINE!
SOURCES OF DEMAND
UNKNOWN DEMAND

Condition-Based Maintenance

Asset → Measurement → Work Order

Reactive Work Order

JUST IN CASE!
THE “ONE SIZE FITS ALL” SUPPLY CHAIN

- Using a single supply chain process and policies will inevitably result in:
  - Higher than necessary supply chain cost
  - Service and lead-time are not in line with requirements

Example:
- 97% in stock availability for a High Criticality Spare
- 97% in stock availability for Rarely used high value item
DEMAND PLANNING

USING HISTORICAL USAGE DATA TO FORECAST REQUIREMENT
INVENTORY PLANNING AND REPLENISHMENT

CLASSIFICATION

PLANNING POLICIES

DEMAND FORECASTING

CALCULATE PLANNING PARAMETERS

EXECUTE REPLENISHMENT

Stock

Reorder point

Safety Stock

Next Order Date

Lot Size

Time

CF  BF  AF
CM  BM  AM
CS  BS  AS

Reorder point
DIFFERENTIATED INVENTORY PLANNING

SOLUTION OVERVIEW

Frequency/Predictability

Fast movers

Medium Movers

Slow Movers

Value/Importance

80% of total usage

Lumpy demand!

Value/Importance

C 5%  B 20%  A 100%

C  Fast

B  Fast

A  Fast

C  Medium

B  Medium

A  Medium

C  Slow

B  Slow

A  Slow

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DIFFERENTIATED INVENTORY PLANNING

SOLUTION OVERVIEW

**Frequency/Predictability**

- Fast movers
- Medium Movers
- Slow Movers

**Value/Importance**

- C: 5%
- B: 20%
- A: 100%

<table>
<thead>
<tr>
<th>Value/Importance</th>
<th>Frequency/Predictability</th>
<th>Fast Movers</th>
<th>Medium Movers</th>
<th>Slow Movers</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>SL: 80% Forecast EOQ</td>
<td>Slow Mover</td>
<td>SL: 90% History</td>
<td>Slow Mover</td>
</tr>
<tr>
<td>B</td>
<td>SL: 90% Forecast EOQ</td>
<td>Slow Mover</td>
<td>SL: 97% History</td>
<td>Slow Mover</td>
</tr>
<tr>
<td>A</td>
<td>SL: 97% Forecast EOQ</td>
<td>Slow Mover</td>
<td>SL: 97% History</td>
<td>Slow Mover</td>
</tr>
</tbody>
</table>
AND MOST IMPORTANTLY......

Factor in known demand

JUST IN CASE & JUST IN TIME

Next Order Date  Receipt

Expected Lead Time

Lot Size

Reorder point

Safety Stock

Stock

Factor in expected Lead Time

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IS THIS ACHIEVABLE?
IFS INTEGRATED SOLUTION

SUPPLY CHAIN

EQUIPMENT MANUFACTURING, SUPPLY & RENTAL

SERVICE AND ASSET MANAGEMENT

ASSET DESIGN
- Asset Design
- Design Objects
- Modifications
- Multiple Views
- As Designed
- System Structure
- Function
- Structure
- As Built
- Project Aware
- Procurement
- Asset Status
- Documents

ASSET MANAGEMENT
- Asset Definition
- Configuration Control
- Preventative Maintenance
- Fault Reporting
- Call Centre
- RCM
- SLAs
- MRO
- Performance Analysis
- Work Management
- Service Contract Management

ASSET MANAGEMENT
- Mobile & Wireless
- Resource Allocation
- Scheduling
- Material Management
- Equipment Monitoring
- Tools and Facilities
- Time and Expenses
- Compliance
- Reactive Maintenance
- Depot Repair

OPTIMISED SCHEDULING / 360
- Optimisation Engine
- Highly Configurable (handle complex rules)
- Graphical Gantt with Alerts

PROJECT MANAGEMENT

PLANNING
- Primavera
- Dependencies
- Constraints
- Resources
- Progress

Microsoft Project

CONTRACT MANAGEMENT
- Contract Management
- Variation & Change Control
- Invoicing and Applications
- Bid Management
- Collaboration
- Documents
- Workflow
- Estimating

COST CONTROL
- WBS & CBS
- Top Down or Bottom Up
- Budgeting
- Periodic Reviews
- Progress
- Earned Value
- Estimate to Complete
- Multi Currency
- Quantities
- Hours

EXECUTION
- Time Reporting
- Expenses
- Deliverable Tracking
- Project Dashboard
- Status Reporting
- Work to Lists
- Exceptions & Alerts
- Risk Management
- Material Planning
- Resource Planning

HUMAN RESOURCES

FINANCE