

# Oracle Complex Maintenance Repair and Overhaul (cMRO)



## KEY FEATURES

- Increase maintenance planning and execution efficiency through standard industry processes, supported by best-in-class functionality and user experience
- Complete Life Cycle and Maintenance Compliance tracking of Configurations and Parts
- Most comprehensive Planning solution for Forecasting, Planning and Scheduling leverages Oracle's Value Chain Products such as Demantra, Inventory Optimization, ASCP and Production Scheduling
- Focused Primary User Workbenches designed to maximize information flow by supporting planning and execution processes and standardizing business processes across Heavy- and Line-Maintenance.
- Complete Engine Shop solution built to support the reduction in engine overhaul turnaround times and increase quality by supporting and considering all major processes within Engine Induction, Disassembly, NDT Testing, Component Routing, Third Party Maintenance, Material Marshalling and Assembly Maintenance. cMRO for Engine Shops provides integrated workbenches for Engine and Component Maintenance Planning, as well as functionality to support Build Goals, Service Bulletin Automation and Supplier Warranty.
- End-to End Document Control Solution that supports Electronic Document Receiving, Document Management and Publishing including Automation for Engineering and Configuration Data creation and revision

The true value of any maintenance information system is revealed when complex assets – like aircraft, ships, engines, or turbines – are removed from service for maintenance. Fast, reliable service depends on having the right parts, technicians, and tools on-site to repair and return the asset to service as soon as possible.

Oracle Complex Maintenance, Repair & Overhaul (cMRO) delivers the total functionality Maintenance, Repair and Overhaul organizations demand to successfully manage their entire maintenance operations. MRO service providers worldwide profit from Complex MRO's rich core feature set – outperforming traditional best-of-breed-solutions and from an out-of-the-box integration with the most powerful global enterprise application suite in the market today – the Oracle E-Business Suite.

By integrating every component of your MRO operation, cMRO provides complete real-time visibility across the entire operation. Users realize a lower cost of ownership as a result of cMRO's position within the Oracle E-Business Suite. It connects and automates the entire flow of your business processes from financials and human resources to complete supply chain management, so your business runs at peak efficiency, worldwide.

## Key Features at a Glance

cMRO is a complete end-to-end maintenance solution to manage, integrate and optimize lean MRO operations across aerospace, defense, commercial and heavy industries. In its core competencies, cMRO provides a set of best-in-class functionality to support every maintenance and service process for operators and maintenance providers of complex equipment.

cMRO supports all facets of Asset Maintenance activity:

- Operational (Dispatch/On-Call)
- Transit (Through/Layover)
- Heavy (Depot/Dry dock)
- Engine/Powerplant Overhaul
- Component/Sub-component Overhaul
- Third Party Services

**KEY BUSINESS BENEFITS**

cMRO is the largest single vendor of Maintenance, Repair and Overhaul applications in the market. It offers more integrations to peripheral ERP systems, more functionality than boutique point solutions and the most business scenario coverage of any other out-of-the-box solution.

With cMRO, configurations and engineering data can be created and maintained efficiently and accurately saving time and money and guaranteeing consistency throughout the system

The cMRO planning functionality together with the integration into Value Chain Planning increases accuracy in forecasting, planning and scheduling and provides the functionality to optimize resources, material and costs, ultimately resulting in optimized equipment uptime and customer satisfaction

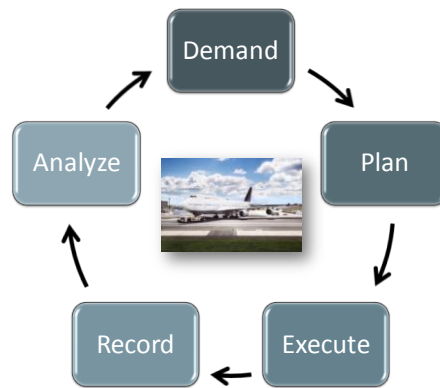
Superior user experience combined with the support of state of the art technologies such as handheld devices, enables users to perform their work most efficiently and accurately, optimizing the execution of the business processes and increasing turnaround times while reducing labor costs

cMRO provides dedicated functionality for its users to optimize the operational and depot planning and repair processes, achieving quick turnaround times in all types of environments.

Oracle's complete range of Business Intelligence and Information Discovery solutions can be utilized for enterprise reporting, ad-hoc queries, analysis dashboards, key performance indicator reports and score cards.

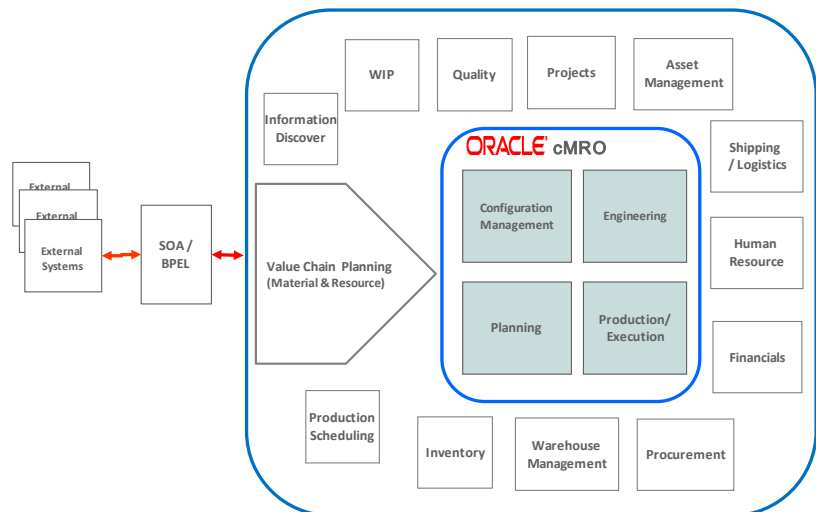
**Key Benefits at a Glance**

**Lifecycle Asset Maintenance** - cMRO supports MRO operators by managing all facets of the maintenance program for an asset; from cradle to grave. These process steps support planned, unplanned and condition-based maintenance programs.



**Integrated System Solution** - Oracle cMRO is a component-based solution embedded into Oracle's eBusiness Suite; providing integrations with modules such as Value Chain Planning, Procurement, Inventory, Financials, and Human Capital Management.

Deployed modularly, customers can leverage existing investments and provide a fast time to value. In addition Oracle's open standard technology can be used to connect any external system to complement the core functionality.

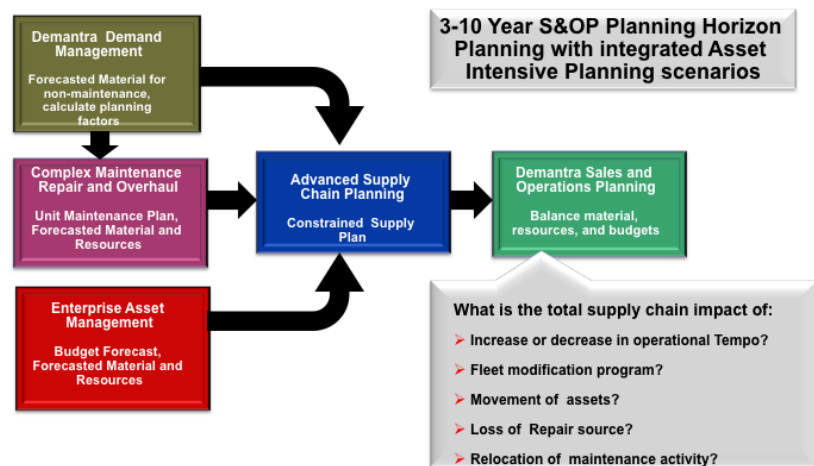


**Configuration Control and Maintenance Compliance** - cMRO offers complete life cycle tracking of configurations, parts and maintenance history accomplishments.

Configuration changes are validated with position templates and parts change rules, generated from the illustrated parts catalog, and approval workflows in order to provide the necessary control and oversight. Every parts attribute change or usage recording (install base counter) will be recorded and stored for auditing purposes.

All maintenance performed is recorded against the part and configuration, with required sign offs at multiple levels, are required for full accountability. Quality plans can be enabled for additional compliance recordings and sign off requirements.

**Forecasting, Planning and Scheduling** - cMRO provides a range of functionality for strategic forecasting, planning and scheduling leverages Oracle's Value Chain Planning (VCP) suite of applications (Demantra and Advanced Supply Chain Planning [ASCP]). VCP, together with input from cMRO, enables customers to look at maintenance requirements out in the future, typically 3-5 years and beyond, and provide insight into cost, resource and material impact based on actual and potential changes in the customers operations. Simulation plans can be used to perform what-if analysis in the areas of fleet changes, resource adjustments and various other parameter changes that would impact the maintenance forecast. Different plans can be compared to support decision making about necessary changes to be ready for the future.



Planning in cMRO, 1-3 years out, starts with a process to automatically create maintenance visits for line and heavy maintenance based on operations schedule, forecasted usage and maintenance forecast. Auto visit planning and packaging continuously refines upcoming visits, adjusting to forecast changes. To fine tune the automated rough cut visit plan, cMRO provides specific planning workbenches for heavy maintenance planning (aircrafts etc.), line maintenance planning, complex assembly maintenance planning (engines, turbines, gearboxes, etc.) and component maintenance planning (valves, actuators, etc). The workbenches are tailored to efficiently plan the maintenance considering equipment availability (operational plans and planned downtime), facilities, resources capacity and material availability. In addition to the planned maintenance, cMRO planning functionality will also respect forecasted non-routine maintenance requirements based on historical non-routine analysis. Similar to

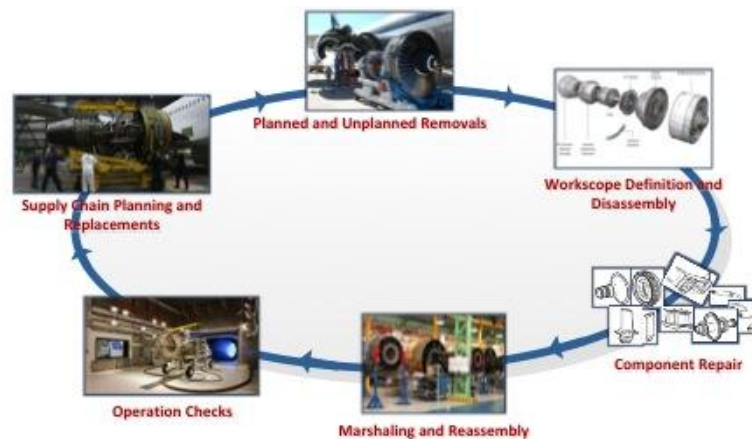
forecasting, cMRO utilizes the Value Chain Planning modules for historical non-routine analysis, resource capacity and material availability calculations.

VCP's Production Scheduling (PS) module optimizes the work order schedule based on work breakdown structure definitions from engineering and planning. It respects complex work order inter-dependencies and considers material, resource and tools availability. Its intuitive graphical user interface supports root cause analysis, critical path and unlimited what-if scenarios for efficient and effective Visit planning.

The production planner will also be equipped with a Material Management workbench, which provides a holistic view of the work orders' required materials. Users can easily identify material shortages, while utilizing the workbench features such as material reservations, inter-organization material transfers, cannibalizations etc. to locate material and drive the supply to the correct work order.

**Engine Shop Services** - For Operators and Engine Repair Stations, cMRO offers a solution covering the complete engine maintenance process; including engine and component shop planning, improved reliability analysis, supply chain integration, workscope definition, component and parts marshalling, improved maintenance scheduling and supplier warranty support.

Detailed marshalling visibility, coupled with fully integrated supply chain functions including warranty and reservations, help to resolve bottlenecks and increase turnaround times. These new tools transform the engine maintenance and planning process, providing an efficient, easy to use system, designed to optimize engine repairs, reducing burned component green time and maximizing life expectancy.



**End-to-End Document Control** - Through the packaged integration into Enigma 3C, cMRO provides the complete end-to-end process of receiving, managing and publishing of all maintenance relevant OEM documents such as illustrated parts catalogs (IPC), aircraft maintenance manuals (AMM), engine maintenance manuals (EMM), wiring diagram manual (WDM), maintenance planning documents (MPD), airworthiness directives (AD), Service Bulletin (SB), Master Minimum Equipment List (MMEL), etc.

Enigma enables the technical services organization to receive the document in electronic form into Enigma 3C and amend the content with additional and changed information based on internal policies. Documents can be enhanced with tags and effectivities to support fast and easy access for engineers, planners and technician. Upon publishing the documents and revisions are being stored in a central repository and made accessible to every user at the same time.

The integration between cMRO and Enigma 3C automatically creates and revises master configurations based on the published IPC and task and sub-tasks in route management based on the AMM.

Links of every published document are generated in the cMRO user interfaces for easy access of the document in Enigma's repository for engineers, planners and technicians.





Job cards are generated in cMRO using Enigma's job card generator giving customer full flexibility in style sheets and job card packaging.

#### CONTACT US

For more information about Complex Maintenance Repair and Overhaul (cMRO), visit [oracle.com](http://oracle.com) or call +1.800.ORACLE1 to speak to an Oracle representative.



#### CONNECT WITH US

-  [blogs.oracle.com/oracle](http://blogs.oracle.com/oracle)
-  [facebook.com/oracle](http://facebook.com/oracle)
-  [twitter.com/oracle](http://twitter.com/oracle)
-  [oracle.com](http://oracle.com)

#### Integrated Cloud Applications & Platform Services

Copyright © 2015, Oracle and/or its affiliates. All rights reserved. This document is provided for information purposes only, and the contents hereof are subject to change without notice. This document is not warranted to be error-free, nor subject to any other warranties or conditions, whether expressed orally or implied in law, including implied warranties and conditions of merchantability or fitness for a particular purpose. We specifically disclaim any liability with respect to this document, and no contractual obligations are formed either directly or indirectly by this document. This document may not be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without our prior written permission.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group. 1015

