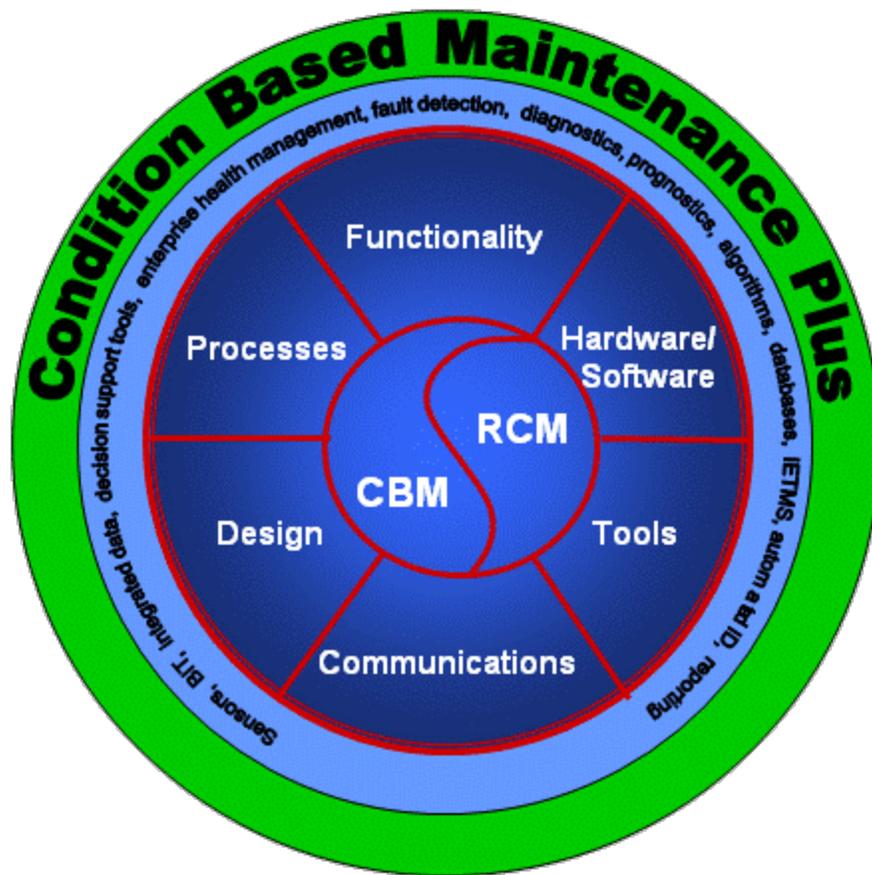


CONDITION BASED MAINTENANCE PLUS (CBM⁺)



2012 CBM⁺ Plan

DASD (Maintenance)

June 2012

1. Introduction

Condition Based Maintenance Plus (CBM⁺) is established Department of Defense (DoD) policy in DoD Instruction (DoDI) 4151.22. The CBM⁺ Action Group (AG) has been developed pursuant to the authority of the Assistant Secretary of Defense for Logistics and Materiel Readiness (ASD(L&MR)), the responsible maintenance official for DoD, and is led by the Deputy Assistant Secretary of Defense for Maintenance Plans and Policy (DASD(MP&P)).

This 2012 CBM⁺ Plan establishes the CBM⁺ initiative's organization and defines members, responsibilities, relationships, procedures and proposed activities directly associated with the CBM⁺ AG. The mission of the CBM⁺ AG is to promote, advocate, and monitor the implementation of CBM⁺ across DoD's maintenance and logistics processes. Additional details are delineated in DoDI 4151.22 and Attachment A of this document.

2. Background

DoD policy requires that CBM⁺ be implemented for maintenance and logistics support of Service weapon systems where cost effective. The scope of CBM⁺ includes maintenance-related processes, procedures, technological capabilities, information systems, and other logistics concepts that apply to both legacy systems and new acquisition programs. In simple terms:

CBM⁺ is the application and integration of appropriate processes, technologies, and knowledge based capabilities to improve the availability, reliability, and ownership costs of DoD systems and components across their life cycle. At its core, CBM⁺ is maintenance performed based on evidence of need, integrating reliability centered maintenance (RCM) analysis with those enabling processes, technologies, and capabilities that enhance the readiness and maintenance effectiveness of DoD systems and components. CBM⁺ uses a systems engineering approach to collect data, enable analysis, and support the decision-making processes for system acquisition, sustainment, and operations.¹

3. Organization

The key groups involved in CBM⁺ activities are the AG, and Working Integrated Product Teams (WIPTs). Responsibilities and procedures are provided in Attachment A.

¹ DoDI 4151.22, *Conditioned Based Maintenance Plus (CBM⁺) for Materiel Maintenance*, being revised

a. CBM⁺ Action Group (AG). The AG is a cross-service team that meets on a regular basis and is chaired by the DASD(MP&P) representative. The AG monitors CBM⁺ progress across DoD. The primary AG members are designated by the Army, Navy, Air Force, Marine Corps, Defense Logistics Agency, and the Joint Staff. Adjunct members participate can be added by the CBM⁺ AG Chair. The following table lists the current Core AG membership.

Component	AG Member
ASD(L&MR) - Chair	Mr Greg Kilchenstein - DASD(MPP)
Army	Mr Jeffrey Jenkins – HQDA G4
Navy	Mr Richard Dorn – OPNAV N4
Air Force	Mr Robert Riegert– AF/A4
Marine Corps	Mr Alonzo Mays – HQMC I&L
Joint Staff	Mr Steve Morani – JCS J4
DLA	Mr Thomas Presley - DLA

b. CBM⁺ Working IPTs (WIPTs). A WIPT is established to accomplish a specific short term goal(s) related to improvement of a maintenance technology, process, policy or capability. The leader of each WIPT is designated by the CBM⁺ AG Chair and their charter (as required) is approved by the AG. The WIPT may request support and/or participation of government or industry personnel to gain knowledge of additional or new CBM⁺ technologies or processes. The following table lists the current/proposed WIPTs and their leads.

WIPT	Lead(s)
Reliability Centered Maintenance (RCM)	Mr Ron Graffius (NAVSEA) Mr Jason Hamilton (MARCORSYSCOM)
Expeditionary Fluid Analysis Capability (EFAC)	Mr Greg Kilchenstein (OSD) Mr. Jim Baker (US Army)
CBM ⁺ Metrics Development	Mr Greg Kilchenstein (OSD)

4. Actions

The following CBM⁺ activity is planned for CY 2012. Other activities may be pursued at the direction of the CBM⁺ AG Chair.

a. Revise DoD policy and associated guidance as necessary to encourage and promote CBM⁺.

Successful CBM⁺ implementation requires close coordination between DoD acquisition logistics and materiel management policies. Additionally, various DoD guidebooks exist to assist in maintenance-related planning and execution.

- Develop additional and/or revised policy/guidance recommendations (ongoing)
 - DoDI 5000.02
 - DoDI 4151.22
 - DoDM 4151.22M
 - Defense Acquisition Guidebook
- Update CBM⁺ Plan for 2013 (Dec 12)
- Research and consider additional content for CBM⁺ Guidebook (Aug 12)

b. Establish and maintain an active forum for government and commercial CBM⁺ applications, benefits, lessons learned and research.

Creating a forum of CBM⁺ information backed by identified, knowledgeable personnel in the varied aspects of CBM⁺ will assist the programs in selecting the highest potential CBM⁺ initiatives and improve synergy between platforms. Information should include military and commercial program and project briefings, educational and research resources available, sites involved in CBM⁺ activity, and future events.

- Populate CBM⁺ web site (quarterly review by AG)

c. Monitor and coordinate CBM⁺ development efforts among the Services and across DoD.

CBM⁺ WIPTs are established at the direction of the CBM⁺ AG to conduct research and development activity pertaining to specific maintenance improvement issues. With the assistance and involvement of the CBM⁺ AG, the WIPTs are chartered to perform specific action that will further overall CBM⁺ objectives and should be disbanded when the action is complete, unless additional goals are established. WIPT leaders will report to the AG, as directed.

- The RCM WIPT is chartered to develop and further the understanding of RCM across the Services and improve RCM application in DoD weapon systems. 2012 tasks are delineated in their Charter.
- The EFAC WIPT is chartered to leverage current activity and previous CTMA projects for demonstration and analysis. The project plans to utilize standardized fluid analysis and technical support for condition monitoring of oil and other lubricants in selected ground (non-aviation) maintenance organizations. The demonstration and analysis may include either fielding at new sites or leveraging already fielded field portable tools. 2012 tasks are delineated in their Charter. The general tasks are:
 - Define joint requirements
 - Survey industry to identify EFAC technologies

- Implement a BCA methodology to support decision making
 - Make inputs to joint/service level applicable policies
 - Share information with all members on current EFAC efforts and evaluations
- The Metrics WIPT is chartered to conduct activities that develop and publish appropriate metrics for Service CBM⁺ initiatives. The objective is to establish suitable metrics to be used in a 2012 DoD CBM⁺ Service review and status report in support of the ongoing DoD maintenance efficiency efforts. 2012 tasks are delineated in their Charter.
- d. Share information and communicate to other organizations on CBM⁺ progress.

CBM⁺ initiatives reflect universally popular objectives, but they can lose support when faced with competing operational priorities. Continued research into emerging technologies and business practices provides programs with the latest information for selecting optimum maintenance solutions. Sharing the information between programs and Services will stimulate forward progress in CBM⁺ development and implementation. Regular progress reviews will ensure that new personnel and programs will be included into the CBM⁺ environment and that CBM⁺ strategic plans stay on track.

- Update CBM⁺ brochure, as necessary (ongoing)
 - Update CBM⁺ introduction presentation (Jul 12)
- e. Conduct studies and analysis in support of CBM⁺ implementation.

The AG will meet on a periodic basis/as required to share information, plan activity, and respond to directed tasking. Additional studies can be adopted for completion by the Chair and AG members are expected to participate with resources sufficient to effectively represent their Service or activity. Members are encouraged to engage other Service personnel to satisfy any required expertise for the subject or technology issue at hand. A current study is:

- SAE Study: SAE proposed a study on “CBM Recommended Practices.” They are requesting that the Services share experiences and lessons learned to inform a broader understanding of this fairly new discipline. They plan to start with a process that captures the CBM “recommended practices,” eventually leading to the review and documentation of “best practices,” and finally “standards” if appropriate. The recommended practices addressed in this document will include:
 - Glossary of Terms
 - Definition and scope of CBM
 - Potential elements of CBM
 - RCM should be the method used to determine CBM requirements

- Steps to implement CBM - Define process
- Relationships of CBM to other supportability and product support processes
- Design considerations in new programs
- Design considerations in legacy systems
- Supportability considerations for implemented CBM infrastructure
- Expected benefits, metrics, and outcomes of a properly implemented CBM solution.
- Include both military and commercial considerations

This documentation would eventually be kept in the SAE library and would be another reference for the CBM⁺ Guidebook. Expected completion is 2014.

Attachment A

Responsibilities and Procedures

1. CBM⁺ AG.

- a. AG Chair: The CBM⁺ AG Chair is responsible for:
 - Selecting topics, scheduling and presiding over CBM⁺ meetings, as well as publishing and distributing results of all sessions
 - Facilitating the CBM⁺ agenda and the decision process for resolving conflicts or issues among members
 - Developing and maintaining access to all CBM⁺ information
 - Accomplishing established goals and updating the MESC concerning CBM⁺ progress and issues
 - Authorizing other studies and analyses related to CBM⁺ implementation

- b. AG Core Members: To maintain continuity and meeting coverage, member organizations should designate an alternate member and keep them informed of AG activities. The CBM⁺ AG members are responsible for:
 - Advancing CBM⁺ through planning development and research
 - Developing communications plans to distribute CBM⁺ information throughout their organizations
 - Contributing to the improvement of CBM⁺ through participation in symposiums, workshops, Web sites, newsletters, and publications
 - Recommending strategic direction, policy, and guidance for implementation of CBM⁺ throughout DoD
 - Identifying and analyzing resource strategies for CBM⁺ initiatives
 - Representing their organizations on maintenance and reliability issues
 - Providing support and guidance to the WIPTs and other selected projects
 - Developing, reviewing, and recommending improvements for the implementation and execution of Service CBM⁺ plans and selected programs
 - Providing regular updates on their organization's CBM⁺ activities
 - Collecting and sharing government and commercial CBM⁺ development, implementations, benefits, lessons learned, and research

- c. AG Adjunct Members: Reflecting their responsibilities for oversight and technology advancement, members from the OSD are invited by the CBM⁺ AG Chair to participate in the AG to assist in performance of duties outlined in DoDI 4151.22.

- d. CBM⁺ WIPTs: Both established and emerging maintenance technologies, concepts, and procedures can be leveraged for CBM⁺ development. The AG may establish a relationship with an existing program or create a new WIPT to pursue a specific CBM⁺ task, concept, or initiative. In their specific areas of interest, the CBM⁺ WIPTs are responsible for:
- Conducting and coordinating activities based on a specific charter
 - Meet as required to complete the WIPT's activity
 - Providing recommendations or performing actions, as appropriate