



**RACER
MANAGEMENT PLAN
(FINAL)**

September 2011



Document Change Record

The table below details the changes to this document. The “revision date” column corresponds with the date the changes were finalized, following approval by the RACER Steering Committee. The “author” column indicates the individual or organization that produced the corresponding update.

Prior to the August 2011 revision of the RACER Management Plan, the document existed as three separate documents-- the RACER Business Management Plan, the RACER Change Management Plan, and the RACER Quality Management Plan. The first three entries in the table below show the last date of revision for each document in its separated format. Beginning with the August 2011 consolidated document, a “version number” is no longer assigned to the document; updates are identified only by the month and year of the update.

Revision Date	Description of Revision	Author
July 2007	RACER Change Management Plan, version 2.01. Incorporated input from USAEC (H. Brown).	Booz Allen Hamilton
July 2007	RACER Quality Management Plan, version 2.01. Incorporated input from USAEC (H. Brown).	Booz Allen Hamilton
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1. INTRODUCTION

For over two decades there has been a concerted effort to improve the financial management of the federal government. This effort began with the passage of Public Law (P.L.) 101-576, *Chief Financial Officers Act of 1990* (CFO Act), November 15, 1990. The CFO Act requires each Department and Agency of the Executive Branch to prepare and submit an annual financial statement (AFS) for the preceding fiscal year. The AFS is to be audited by the Inspector General of the reporting entity in accordance with applicable, generally accepted government auditing standards prior to submission to the Director of the Office of Management and Budget (OMB). These requirements were expanded through subsequent legislation, including the Government Performance and Results Act (GPRA), the Government Management Reform Act (GMRA), and the Federal Financial Management Improvement Act (FFMIA).

Both Department of Defense (DoD) Financial Management Regulation (FMR) and Defense Environmental Restoration Program (DERP) guidance provides for the use of electronic cost estimating software in most environmental liability (EL) estimating situations. DoD uses two such estimating software programs. The Remedial Action Cost Engineering and Requirements (RACER) application is used by the Army and the Air Force. The Cost-to-Complete (CTC) component of the Normalization of Data System (CTCNORM) is used by the Navy. The Air Force and Army use RACER for developing parts of out-year ELs estimates and annual budgets. Other DoD and Federal agencies also use RACER to prepare individual cost project estimates and to evaluate cost reasonableness of estimates. Electronic cost estimating applications provide for consistency among EL cost estimates.

The DERP guidance requires that EL cost estimating computer models be subjected to DoD-level reviews in accordance with DoD Instruction (DoDI) 5000.61, *DoD Modeling and Simulation Verification, Validation, and Accreditation (VV&A)*, April 29, 1996. DERP guidance revision of September 2001 allows Service Components to establish formal VV&A policies and procedures for any cost modeling tools used to develop EL reports or CTC estimates. The revised guidance also noted that Components were responsible for developing implementation or supplementation documents for DoDI 5000.61 and establishing VV&A policies, procedures, and guidelines for EL modeling and simulation applications.

In May 2005, the DoD Office of the Inspector General (DoDIG) reported that, although technically complying with existing modeling and simulation requirements, Air Force and Navy VV&A reviews of EL electronic cost estimating systems were performed without comparison of the estimates to actual costs. Interim DoDIG comments suggested that the Air Force Civil Engineering Support Agency (AFCESA) initiate a comprehensive accreditation review of the RACER application to include substantive testing of underlying databases and comparison of RACER estimates to actual costs. A formal DoDIG recommendation required that AFCESA issue guidance requiring that future EL electronic cost estimating system VV&A efforts comply with applicable DoD and Air Force guidance.

The Assistant Deputy Chief of Staff of the Air Force (Installations and Logistics) concurred with the recommendation. Although not required to comment, the Deputy Assistant Secretary of the Army (Environment, Safety, and Occupational Health) also concurred with the recommendation stating that the Army and the U.S. Army Corps of Engineers would work with the Air Force to assist in getting corrective actions completed for RACER.

In December 2005, the Office of Under Secretary of Defense Comptroller (OUSD[C]) in collaboration with the Financial Improvement and Audit Readiness (FIAR) Committee issued the FIAR Plan. The FIAR Plan sets milestones for resolving problems affecting the accuracy, reliability, and timeliness of

financial information. It describes major impediments identified by auditors and management and details an integrated path for DoD financial improvement for the Military Services, or Components, and to confirm these improvements with favorable financial audits.

The need to achieve an unqualified audit opinion on the AFS coupled with the need to correct identified RACER deficiencies are the reasons for development of this RACER Management Plan. The RACER Management Plan encompasses Business Management (Section 2), Change Management (Section 3), and Quality Management (Section 4) procedures and processes. Guidance for periodic Verification and Validation (V&V) of RACER is included in a separate document but is discussed briefly in Section 5 of this document.

1.1 PLAN REVIEW AND UPDATES

This plan requires periodic reviews to ensure continued effectiveness. The plan shall be reviewed at least biennially by the RACER Steering Committee (RSC) (and/or their designated representative[s]) to determine when updates are necessary. The review shall encompass an evaluation of the entire plan, including all referenced supplements.

1.2 DEVELOPMENT AND SUPPORTING DOCUMENTS

The documents listed below were referenced during the preparation of this Management Plan. Prior versions of this document, including the *RACER Business Management Plan, Version 3.01, July 2007*, the *RACER Change Management Plan, Version 2.01, July 2007*, and the *RACER Quality Management Plan, Version 2.01, July 2007* were incorporated into this document.

- RACER documents (e.g., Help Line manual and VV&A reports)
- Government standards/requirements for software/application development
- Industry standards for software/application development
- Tri-Services Parametric Cost Modeling Standard
- Guidance for Verification and Validation (V&V) of RACER, March 2006

2. RACER BUSINESS MANAGEMENT

2.1 PURPOSE

This section defines the business practices and requisite management controls required to improve and maintain the integrity of the RACER application which is used to create CTC estimates.

2.2 SCOPE

The scope of the Business Management Plan is as follows:

- 1) Maintain minimum requirements for parametric cost estimating application “must-do” items to keep the current application and future application releases functioning, auditable, and readily accessible to the user community. This includes:
 - a) Maintain Escalation Rates, Area Cost Factors (ACF), Assemblies and Line Items, and Per Diem rates;
 - b) Distribute the application and updates to all users in a timely manner;
 - c) Provide Help Line support; and
 - d) Support network accreditation, as required.
- 2) Provide an auditable application for estimating environmental projects.
 - a) Maintain models and documentation.
 - b) Add new technology models.
 - c) Maintain VV&A status.
- 3) Establish and maintain formal communication processes.
 - a) Conduct meetings.
 - b) Solicit input from users, as needed.

2.3 MANAGEMENT PROCESS

A two-tiered management approach is used to make decisions concerning changes and enhancements to the RACER application. The two-tiers consist of the RACER Steering Committee (RSC) and the Technical Review Group (TRG). The RSC, the upper tier, makes all final decisions concerning enhancements and changes. The TRG, the lower tier, makes enhancement and change recommendations to the RSC. The two groups interact with each other before any changes or enhancements are made. A two-tiered management approach ensures changes and enhancements are recommended by a different group than the group that approves them. Both the RSC and the TRG have a chair responsible for presiding over meetings.

2.4 MANAGEMENT STRUCTURE

RSC and TRG membership consists of government-only personnel and may include government contractors specifically identified by a government agency as an agency representative. The RSC and TRG may have additional advisors as needed. Interaction between the RSC and TRG is both upward and downward. Membership within the RSC and the TRG is flexible and dynamic. Agencies desiring

membership in the TRG and/or the RSC should send their membership request to the RSC. Membership is open to all federal agencies involved in the preparation of EL cost estimates. Contractors, as agency representatives, may provide recommendations and feedback to the RSC and TRG; however, voting rights remain with government personnel only. Benefits of membership include participation in meetings and the opportunity to represent agency interests in the development and enhancement of RACER and to compare and discuss cross-agency best practices.

2.4.1 RACER Steering Committee

Government agency representatives on the RSC should be involved in CTC reporting and issuing guidance or funding for their respective agency cost engineering initiatives. The RSC may request advice and/or information from advisory personnel on an as-needed basis. The RSC maintains a listing of current RSC members and agency representatives.

2.4.2 Technical Review Group

Government agency representatives on the TRG should include experienced parametric cost estimating software users (i.e., RACER) and Subject Matter Experts (SMEs) in the fields of technology, software, databases, ACFs, per diem rates, and auditing/financial services. The TRG may request advice and information from advisory personnel on an as-needed basis. The TRG maintains a listing of current TRG members and agency representatives.

2.5 RESPONSIBILITIES

Responsibilities for the following tasks are outlined below.

2.5.1 Changes and Enhancements

The TRG is responsible for identifying changes and enhancements to the application. The changes and enhancements will come from, but are not limited to, the information acquired by experienced users and SMEs, as well as specific needs from agencies. The TRG presents recommended changes and enhancements to the RSC. The TRG makes recommendations pertaining to the priority of the changes and enhancements. The RSC reviews and votes on the changes and enhancements to determine which ones will be implemented. The RSC must approve all changes and enhancements prior to incorporation in the application. Section 3 of this Management Plan details change management procedures.

2.5.2 Costs

It is the responsibility of the TRG to identify costs associated with recommended changes, enhancements, maintenance and upkeep of the application, and Help Line support. The RSC is responsible for providing funding for approved changes and enhancements.

2.5.3 Agency Funding

The RSC is responsible for identifying the level of funding from each agency for approved changes and enhancements. The RSC is also responsible for identifying the level of funding from each agency for the annual maintenance and upkeep of the application along with Help Line support.

2.5.4 Policy and Guidance

Members of the RSC must keep all persons on the RSC and TRG updated on policy and guidance changes and implementation of those changes in the member's respective agency. The RSC identifies programmatic priorities and issues that affect the strategic outlook for developing EL estimates. The RSC shares this strategic vision with the TRG as part of the RSC interaction with the TRG. The strategic vision addresses the needs, priorities, and concerns the RSC has for RACER. The TRG ensures that the guidance provided by the RSC is addressed accordingly.

2.5.5 Training

User training on the RACER application is the responsibility of each agency. TRG members should interface with their respective agency training Point of Contact (POC) and RACER application trainers to ensure that training materials are kept up to date with annual application releases and include training on any changes to the application.

2.5.6 Quality Management

The TRG ensures that quality management procedures are in place and implemented, as specified in Section 4 of this document, RACER Quality Management.

2.5.7 Strategic Vision

The strategic vision for the RACER application is outlined in the Five-Year Operating Plan, as prepared by the TRG. The RSC reviews and approves the Five-Year Operating Plan.

2.5.8 Meetings

Members of the TRG meet at least annually, in advance of the RSC meeting, to ensure that all TRG roles and responsibilities are being met and to establish the agenda and recommendations for the annual RSC meeting. Members of the RSC meet annually, prior to the start of the government fiscal year, to ensure that all RSC roles and responsibilities are being met. The TRG and RSC may choose to meet more frequently if they deem necessary. Section 2.8 details the objectives for TRG and RSC meetings.

2.5.9 Communication

To ensure clear, concise, and appropriate communication between the RSC and the TRG, both groups prepare minutes following meetings and provide appropriate, responsive, and meaningful feedback. Both the TRG and RSC are responsible for preparing any other communications necessary to ensure both parties' awareness of situations affecting the RACER application.

2.6 DECISION MAKING PROCEDURES

This section details the decision making procedures for the TRG and RSC.

2.6.1 RACER Steering Committee

The RSC makes decisions concerning funding, strategic vision, priorities, approval of recommended changes and enhancements, priorities, as well as other issues as they occur. Each decision is made through a voting process.

2.6.1.1 Voting

Each of the RSC member agencies has a vote. All votes are considered equal. Votes are required for, but not limited to, the following: changes and enhancements, priorities, model development, graphical user interface (GUI), and release dates. Voting shall require at least 50% of membership participation.

2.6.2 Technical Review Group

The TRG makes decisions concerning recommended changes and enhancements, as well as other issues as they occur. Each decision is made through a voting process.

2.6.2.1 Voting

Each of the TRG member agencies has a vote. All votes are considered equal. Votes are required for all recommendations made to the RSC. Voting shall require at least 50% of membership participation.

2.7 ANNUAL TASKS

The following list details the tasks which must be accomplished annually to maintain the RACER application.

2.7.1 Update Assembly Cost Database

Description – This task involves updating the assembly prices for labor, materials, equipment, and subcontracted services. In addition, relationships between assemblies in RACER and Construction Specifications Institute (CSI) Tasks in the Government Cost Book also are updated to address any changes in the Government Cost Book. Assembly prices typically are updated biennially, following release of the Government Cost Book.

Responsibilities – RACER maintenance and support contractor, TRG.

Deliverables – Updated RACER database containing updated RACER assemblies, including a report documenting the method for updating the assembly cost database along with a comparison of new values to prior year values.

Quality Objectives – RACER assemblies that use Tasks from the Government Cost Book must agree with Tasks, Labor items and Equipment items in the Government Cost Book.

Schedule Constraints and Dependencies – Depends on issuance of the final released version of the Government Cost Book no later than four months prior to the scheduled release date for RACER. The deliverable must be completed in time for quality control (QC) and quality assurance (QA) reviews prior to RACER releases.

2.7.2 Update Area Cost Factors

Description – This task involves updating the RACER database with new ACFs by location. The U.S. Army Engineering Support Center, Huntsville (USAESCH) provides the ACFs annually. The RACER database must be updated annually to incorporate the current ACFs.

Responsibilities – RACER maintenance and support contractor, TRG.

Deliverables – Updated RACER database containing current ACFs by location, including a report documenting the method for updating ACFs along with a comparison of new values to prior year values.

Quality Objectives – All ACFs in the RACER database must agree with ACFs issued by the USAESCH.

Schedule Constraints and Dependencies – Depends on issuance of ACFs by the USAESCH. The deliverable must be completed in time for quality control (QC) and quality assurance (QA) reviews prior to application releases.

2.7.3 Update Per Diem Rates

Description – This task involves updating the RACER database with new per diem rates by location. The government annually develops and issues per diem rates for locations in the Continental United States (CONUS) and Outside the Continental United States (OCONUS). The RACER database must be updated annually to incorporate the current per diem rates by location.

Responsibilities – RACER maintenance and support contractor, TRG.

Deliverables – Updated RACER database containing current per diem rates by location, including a report documenting the method for updating per diem rates, along with a comparison of new values to prior year values.

Quality Objectives – All per diem rates in the RACER database must agree with per diem rates issued by the government.

Schedule Constraints and Dependencies – Depends on issuance of per diem rates published by the General Services Administration (GSA) for CONUS locations and the Department of State for OCONUS locations. The deliverable must be completed in time for QC and QA reviews prior to application releases.

2.7.4 Update Escalation Factors

Description – This task involves updating the RACER database with new escalation index factors by year and month. The escalation index factors are obtained from the Secretary of the Air Force Financial Management and Comptroller (SAF/FMC). These factors are the same as the OMB/OUUSD(C) factors. The RACER database must be updated annually to incorporate the current escalation index factors.

Responsibilities – RACER maintenance and support contractor, TRG.

Deliverables – Updated RACER database containing current escalation index factors, including a report documenting the method for updating escalation index factors, along with a comparison of new values to prior year values.

Quality Objectives – All escalation index factors in the RACER database must agree with values in government and commercial sources.

Schedule Constraints and Dependencies – Depends on publication of escalation index factors by SAF/FMC. The deliverable must be completed in time for QC and QA reviews prior to application releases.

2.7.5 Perform Quality Reviews

Description – This task involves conducting reviews of the database updates and other changes to the RACER application. Reviews are conducted in stages corresponding to the development cycle (i.e., alpha, beta, final acceptance, and final). Reviews involve testing the application according to written test plans to ensure that all functional and technical requirements have been met or achieved.

Responsibilities – RACER maintenance and support contractor, TRG.

Deliverables – Written test plans (in advance of testing). Written test reports documenting the methods, findings, and results from testing.

Quality Objectives – Ensure that all functional and technical requirements have been met or achieved.

Schedule Constraints and Dependencies – Depends on completion of the database updates (Tasks 2.7.1, 2.7.3, 2.7.4). Must be completed prior to application releases (see Task 2.7.6, below).

2.7.6 Release Updated Application to Users

Description – This task involves releasing the updated RACER application to users within federal government agencies. This task also involves tracking user registration data so RACER usage within the federal government can be tracked.

Responsibilities – RACER maintenance and support contractor, TRG.

Deliverables – RACER application.

Quality Objectives – Application is released on time with no critical errors.

Schedule Constraints and Dependencies – Depends on government acceptance of the updated application per the QC review (Task 2.7.5).

2.7.7 Provide Technical Support to Users

Description – This task involves providing technical support to RACER users within federal government agencies. Technical support is provided via telephone hotline and e-mail. This task also includes notifying users of problems and workarounds, as well as mid-year service releases when issued.

Responsibilities – RACER maintenance and support contractor, TRG.

Deliverables – Monthly help line usage reports, monthly Problem/Change Request (P/CR) reports, and an annual help line report.

Quality Objectives – Users are provided with timely and accurate information and updates.

Schedule Constraints and Dependencies – Depends on timely issuance of any service releases as well as government acceptance of suggested workarounds.

2.7.8 Conduct Technical Review Group Meetings

Description – This task involves planning, conducting, and documenting meetings of the TRG. Specific activities include preparing agendas, preparing meeting materials, conducting the meetings, and preparing minutes documenting the proceedings and discussions.

Responsibilities – TRG. RACER maintenance and support contractor participates as requested by the TRG.

Deliverables – Agendas, meeting materials, and minutes.

Quality Objectives – Meetings are held according to schedule; a minimum of one per year preceding RSC meeting.

Schedule Constraints and Dependencies –Conflicting schedules.

2.7.9 Conduct RACER Steering Committee Meetings

Description – This task involves planning, conducting, and documenting the annual meetings of the RSC. Specific activities include preparing agendas, preparing meeting materials, conducting the meetings, and preparing minutes documenting the proceedings and discussions.

Responsibilities – RSC.

Deliverables – Agendas, meeting materials, and minutes.

Quality Objectives – Meetings are held according to schedule; one per year.

Schedule Constraints and Dependencies –Conflicting schedules.

2.7.10 Review and Revise Five Year Operating Plan

Description – This task involves reviewing and updating the Five Year Operating Plan for RACER for presentation and discussion at the annual meeting of the RSC.

Responsibilities – TRG.

Deliverables – Updated Five-Year Operating Plan.

Quality Objectives – Submitted to RSC on time.

Schedule Constraints & Dependencies – Constrained by manpower and TRG input (per Task 2.7.8).

2.7.11 Evaluate Programmatic Priorities and Policy Changes

Description – This task involves reviewing and analyzing implications of changes in regulations, policy, guidance, reporting systems, and other new developments.

Responsibilities – TRG (See Section 2.5.4 for more information on policy changes).

Deliverables – Output from this analysis is used in updating the Five Year Operating Plan for the next annual meeting of the RSC.

Quality Objectives – Timely incorporation into the Five Year Operating Plan.

Schedule Constraints & Dependencies – Constrained by manpower and depends on TRG input (per Task 2.7.8).

2.8 MEETING OBJECTIVES

Periodic reviews of the RACER application and budget requests for application maintenance and enhancement submissions are essential to achieving the purpose of the Five Year Operating Plan. Table 2-1 outlines meeting objectives within the functional community.

Table 2-1 Essential Communications

Meeting	Schedule	Meeting Topics	Responsibility for Coordination/Planning
TRG Meeting	At least annually	<ul style="list-style-type: none"> • Evaluate completed and ongoing activities. • Develop list of annual tasks and enhancements to be included in next release. • Develop cost estimate for each annual task and enhancement. • Update Five-Year Operating Plan to present to RSC for approval. The update shall include the list of annual tasks and enhancements, as well as their corresponding cost estimates. 	TRG Chairperson
RSC Meeting	Fourth Quarter Fiscal Year	<ul style="list-style-type: none"> • Approve updated Five Year Operating Plan. • Provide funding to accomplish approved annual tasks and enhancements. 	RSC Chairperson

3. RACER CHANGE MANAGEMENT

The RACER application requires updates and improvements to incorporate current standards for environmental remediation. Change Management (CM) processes ensure that changes to the application are approved and documented.

3.1 PURPOSE

This section describes the control process and standard practices for consistently implementing and executing CM for the RACER application.

3.2 SCOPE

The scope of this section is to outline a procedure for initiating, evaluating, prioritizing, and selecting changes for inclusion in the RACER application. These CM procedures ensure that all changes to RACER are fully coordinated with participating government agencies.

3.3 CHANGE PROCESS

The RSC is the ultimate change authority for the RACER application. The TRG evaluates and prioritizes all changes and submits to the RSC for approval. The RSC approves, rejects, withdraws, or places on hold the recommended changes. The TRG determines the best method for implementing the approved changes. For RACER, the change mechanism is called the Engineering Change Proposal (ECP).

3.4 ROLES AND RESPONSIBILITIES

The CM roles and responsibilities are detailed in the following sections.

3.4.1 RACER Steering Committee (RSC)

The RSC is the senior-level organization involved in RACER change management and is the approving authority for all changes to the RACER application.

3.4.2 Technical Review Group (TRG)

The TRG solicits input from stakeholders to determine RACER needs and ECPs. The TRG evaluates all change requests and makes a consolidated recommendation as to their validity and relative importance.

3.4.3 Users

RACER users may provide unsolicited feedback through means such as the RACER Help Line. TRG members may also solicit feedback from users in their respective agencies through other means such as surveys or training courses. Feedback on the RACER application is considered a change request; the TRG may choose to elevate a change request to a formal ECP.

3.4.4 RACER Maintenance and Support Contractor

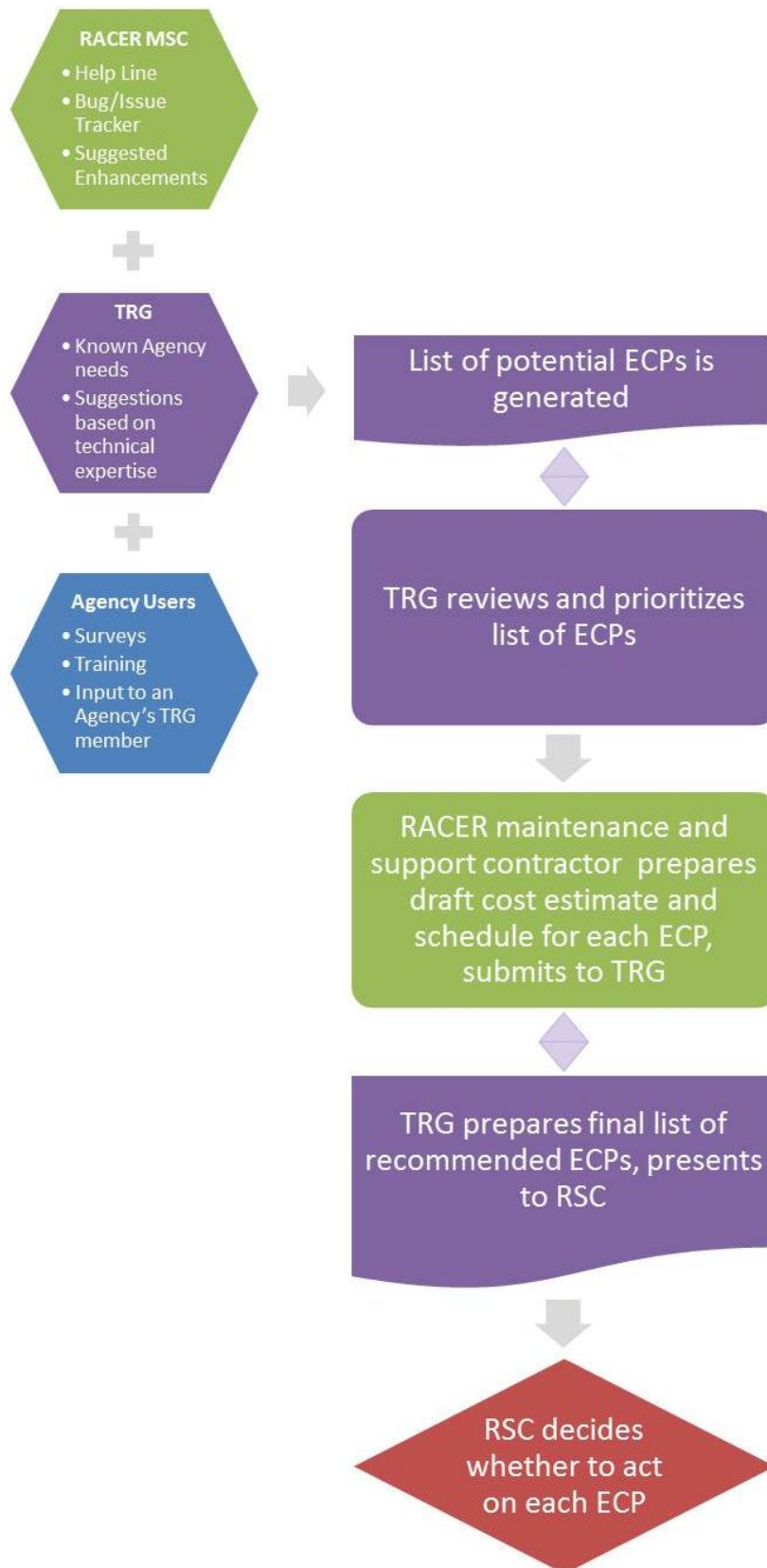
The RACER maintenance and support contractor is contractually responsible to log and remedy known defects. It is responsible for logging Enhancement Requests and reporting these to the government. During the ECP evaluation phase, the RACER maintenance and support contractor may also advise the TRG regarding the feasibility of implementing ERs. This is critical to determine if an ECP may require

phasing over several years. The RACER maintenance and support contractor provides support to the TRG as contracted.

3.5 ENGINEERING CHANGE PROPOSALS

The ECP is the appropriate, formal mechanism for submission of changes or enhancements to RACER. The ECP process is initiated when a change/enhancement is requested or required within RACER. The change can be initiated by the RACER maintenance and support contractor (identified in Figure 3-1 as “MSC”), TRG, or Agency users (government and contractor). Figure 3-1 details the ECP process; the following sections describe the various steps in the process.

Figure 3-1 ECP Process



3.5.1 Initiation of an ECP

Various stakeholders may identify and report bugs, issues, enhancements, or other requests for the RACER application. These stakeholders include:

- RACER maintenance and support contractor – The RACER maintenance and support contractor logs all user error reports and enhancement requests made through the RACER Help Line. The RACER maintenance and support contractor maintains a “bug tracker” which logs all bugs reported by users and by the RACER maintenance and support contractor’s in-house development and testing staff. Although the RACER maintenance contract generally requires the RACER maintenance and support contractor to repair all known bugs, the bug tracker is often a source of information regarding enhancements, therefore it is considered to be a source of input for the ECP process. In addition to the Help Line and bug tracker, the RACER maintenance and support contractor’s in-house development and testing staff may, through the course of their work and based on their technical expertise, recommend enhancements for the RACER application.
- TRG – TRG members are a critical source of input for ECPs. TRG members should be familiar with the needs of their respective agencies and can make requests for enhancements based on those needs. TRG members are also considered to have expertise in the areas of environmental remediation and cost estimating; based on this expertise, they can provide recommendations for improvements to the application based on current best practices.
- Agency users – Agency users are invited to submit requests for enhancements through the RACER Help Line; however, there are several other forums to collect input from Agency users, including surveys, training, and direct communications with their respective TRG member. TRG members should solicit input from agency users on a routine basis by sending surveys, interviewing RACER trainers and trainees on issues encountered during training sessions, and by communicating with known agency users. For any issues identified via these avenues, the TRG member is responsible for ensuring the issue is logged as an ECP and brought forward to the TRG for review.

3.5.2 Generate List of Potential ECPs

The TRG collates all ECP input from the various sources described above in Section 3.5.1, and generates a list of all possible ECPs to be addressed. The RACER maintenance and support contractor enters each ECP into the ECP Tracking system, and ensures that each ECP is complete, accurate, and understandable. At this point in the process, the RACER maintenance and support contractor will refrain from commenting on the validity of the change, as the TRG performs this role.

3.5.3 Review and Prioritize ECPs

The TRG reviews the list of ECPs generated in Section 3.5.2 and assign each item a priority category. The TRG documents their rationale for prioritization and include any additional supporting documentation necessary to substantiate categorization. The chairperson of the TRG is responsible for coordinating with the members of the group to perform ECP review. The TRG makes recommendations on each ECP for use in development of the Five Year Operating Plan, which is ultimately reviewed and approved by the RSC. Table 3-1 depicts the list of priority categories which can be assigned to each ECP.

Table 3-1 ECP Priority Categories

Priority Category	Description
A	ECP should be implemented as soon as possible as an urgent requirement.
B	ECP should be implemented within 12 months. The change is necessary for the optimal functioning of RACER.
C	ECP should be implemented within the next 1 to 5 years. The change has merit, but the requirement is not currently mandatory (“nice-to-have” features).
D	ECP does not have merit or requires additional clarification and resubmission.

The TRG chairman is responsible for providing the group’s assessment of each ECP to the RACER maintenance and support contractor for their updating of the ECP Tracking system.

3.5.4 Prepare Draft Cost and Schedule for Each ECP

After evaluation by the TRG, the RACER maintenance and support contractor prepares an initial time and order of magnitude cost estimate for each ECP. The RACER maintenance and support contractor reports on the relative impact to the RACER application. The cost and time estimates should generally address administration of contractual activities, functional specifications, design and development of source code, testing of the code, review of the revised component by TRG members, preparation of changes to the RACER Help System. The estimate of resources shall be based on performing only the subject ECP (i.e., not in conjunction with any other ECPs) yet include a discussion of any contingencies related to other ECPs currently in evaluation. The draft cost and schedule information should be included in the development of the Five Year Operating Plan. This process shall be expedited for urgent ECPs at the discretion of the TRG chairman, and with the approval of the RSC.

3.5.5 Prepare Final List of ECPs, Present to RSC for Approval

After a review of the initial list of ECPs sorted by priority category and the draft cost and schedule estimate for each ECP, the TRG prepares a final list of ECPs to be approved by the RSC. The TRG may re-categorize an ECP based on the draft cost and schedule prepared in Section 3.5.4. The final recommendation submitted to the RSC for approval will be in the form of the Five Year Operating Plan, and may also include supplemental items as needed (e.g., “urgent” items, or items that can be addressed in the course of routine RACER maintenance and update).

3.5.6 RSC Determines Action for Each ECP

Once the TRG has submitted the list of ECPs to the RSC, the RSC approves, rejects, re-categorizes, or defers each ECP on an individual basis. The determination will be logged by the RACER maintenance and support contractor in the ECP Tracking System.

4. RACER QUALITY MANAGEMENT

The development of RACER and its supporting documentation is subject to quality control (QC) measures and should follow an established plan to ensure those measures are met. This section describes methods for achieving those quality standards.

4.1 PURPOSE

This section describes the processes used to ensure quality of the RACER application and its supporting documentation.

4.2 SCOPE

Quality Management covers processes and procedures, as well as standard documentation that should be used to ensure quality products.

4.3 QUALITY SYSTEM AND DESCRIPTION

It is important that for the RACER application, processes are developed for ensuring that data collected or compiled for use in decisions are of the type and quality needed and expected for their intended use. The following section describes the approach to implementing a quality system.

4.3.1 Quality System Documentation

The following documents encompass the quality program for the RACER application:

- A **Quality Management Plan (QMP)** establishes requirements and procedures for development and maintenance of the RACER application. This section of the RACER Management Plan serves as the RACER QMP.
- **Quality Assurance (QA) Project Plans** define requirements and procedures for specific efforts. QA Project Plans are developed by the RACER maintenance and support contractor as a contract requirement. The TRG reviews these contract deliverables to ensure accuracy and completeness.
- **Quality Assurance/Quality Control (QA/QC) records** provide evidence of achieved quality or compliance with specifications and provide feedback for continuous improvement. QA/QC records are developed by the RACER maintenance and support contractor, and are a contract requirement. The TRG reviews these contract deliverables to ensure accuracy and completeness.

4.4 QUALITY REVIEWS

Reviews of RACER and its associated documentation are performed periodically. These reviews are described below.

4.4.1 Annual Maintenance and Support

The TRG reviews each annual release of the RACER application to ensure functionality of the application as well as completion of contract requirements, including adequate and complete application testing.

4.4.2 Model Evaluation

Aside from annual releases of the RACER application, various external factors can lead to a decision to revise all or part of the application. These factors include parametric cost modeling standards, technological advances, procedural changes, standard design changes, supporting database revisions, and cost data changes. Independent application model reviews and validations shall be performed on a periodic basis by the TRG, in accordance with requirements of the Tri-Service Parametric Model Specification Standard dated 15 April 1999. The methodology for performing model reviews may vary based on the nature of the model and available data; however, the methodology used to perform evaluations and updates is documented by the TRG and approved by the RSC to ensure soundness of approach and compliance with current directives and standards. The TRG ensures documentation of all application models and other features is maintained; this activity is typically performed by the RACER maintenance and support contractor.

Releases which include changes beyond annual maintenance and support items will also undergo review by the TRG. The TRG reviews each change to the RACER application to ensure functionality of the item, functionality of the full application, as well as completion of contract requirements, including adequate and complete application testing.

4.4.3 Help Line Logs

Help Line logs are produced and maintained by the RACER maintenance and support contractor based on calls by valid users. These logs will be presented to the TRG on an ongoing basis to identify any recurring problem areas or critical errors and provide recommendations for resolution within the ECP process outlined in Section 3.5.

4.4.4 Surveys

Surveys are a method to measure quality and identify areas of improvement. Once identified, processes and procedures shall be implemented to rectify noted areas of improvement. User surveys can be initiated by the TRG as a whole; alternatively, individual TRG members may elect to survey their respective user base to better understand agency-specific needs.

5. VERIFICATION, VALIDATION AND ACCREDITATION (VV&A)

DERP Management Guidance (September 2001), requires that computer models used for estimating costs for ELs are verified, validated, and accredited in accordance with the requirements specified in DoDI 5000.61, *DoD Modeling and Simulation (M&S) Verification, Validation and Accreditation*, April 29, 1996. The purpose of this guidance is to ensure that parametric cost estimating systems are verified, validated, and accredited in accordance with the above references, where applicable, and specific requirements described herein. The document *Guidance for V&V of RACER* serves as a supplement to the RACER Management Plan. Refer to *Guidance for V&V of RACER, version 2.0*, March 2006 for additional information.

APPENDIX A: ACRONYM LIST

Acronym	Description
ACF	Area Cost Factor
AFSAFCESA	Air Force Civil Engineering Support Agency
AFS	Annual Financial Statement
CFO	Chief Financial Officer
CM	Change Management
CONUS	Continental United States
CTC	Cost to Complete
CTCNORM	CTC component of the Normalization of Data System
CSI	Construction Specifications Institute
DERP	Defense Environmental Restoration Program
DoD	Department of Defense
DoDI	Department of Defense Instruction
DoDIG	DoD Office Of The Inspector General
ECP	Engineering Change Proposal
EL	Environmental Liability
FFMIA	Federal Financial Management Improvement Act
FIAR	Financial Improvement and Audit Readiness
FMR	Financial Management Regulation
GMRA	Government Management Reform Act
GPRA	Government Performance and Results Act
GUI	Graphical User Interface
M&S	Modeling and Simulation
MSC	Maintenance and Support Contractor
OCONUS	Outside the Continental United States
OMB	Office of Management and Budget
OUSD(C)	Office of Under Secretary of Defense Comptroller
P.L.	Public Law
POC	Point of Contact
QA	Quality Assurance
QC	Quality Control
QMP	Quality Management Plan
RACER	Remedial Action Cost Engineering and Requirements
RSC	RACER Steering Committee
SAF/FMC	Secretary of the Air Force Financial Management and Comptroller
SOPs	Standard Operating Procedures
TRG	Technical Review Group
USAESCH	U.S. Army Engineering Support Center, Huntsville
V&V	Verification and Validation
VV&A	Verification, Validation and Accreditation

