United States Marine Corps
Logistics Requirements Funding Summary (LRFS)
Cost Estimating Tool (CET)

A Quick Cost Estimator for Logisticians Part II

SCEA Conference – Orlando, FL
June 2012

Agenda

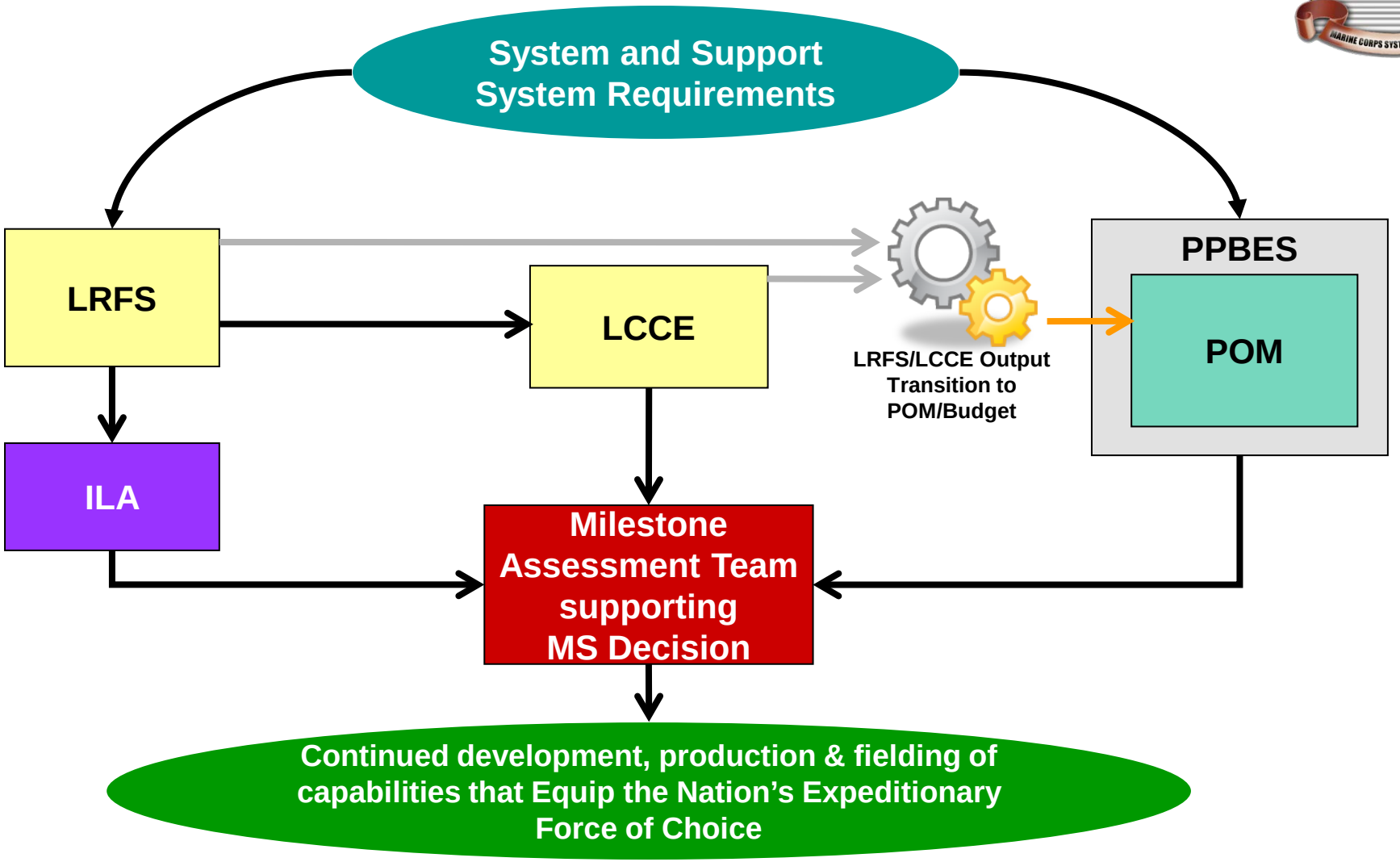
- Background
  - What is an LRFS?
  - Booz Allen Task Specifics
  - Challenges in Developing an LRFS
  - Why do you need the USMC LRFS CET?
  - Requirements and Constrains
- LRFS CET Overview
  - Tool features
  - User Interface
  - Application of Result Uncertainty Calculation
  - Example Outputs
- Future Areas of Interests
- Recognitions
- Summary
  - USMC LRFS CET Benefits

Background

Background – What is an LRFS?

- Definition: The Logistics Requirements Funding Summary (LRFS) is a breakdown of product support functions and sub-functions to establish a required level of product support. It identifies product support requirements and the funds available to meet those requirements. (source: Defense Acquisition University)
  - LRFS displays requirements versus funding for all IPS elements and related disciplines, by fiscal year and appropriation, and is traceable to logistics support plans.
  - LRFS supports Independent Logistics Assessment (ILA) review process to ensure support funding requirements for each IPS element are appropriately identified, funding is available, and shortfalls identified.

Background – LRFS Relationship to LCCE/POM



Background- USMC LRFS CET Task Specifics

- Reviewed current DoD, Navy/USMC policies and guidance
- Conducted a market survey of existing tools relating to LRFS development
- Conducted data collection and cost estimating methodology development including compiling rates and factors from various sources
- Conduct regular IPT meetings that helped define tool's CES, key capabilities, testing and training requirements
- Deployed full version 1.0 - **June 2011**
- Provide post tool deployment support – **June 2011 to June 2012**: (training, maintenance & enhancement)

Phase I
(May 2009 – June 2010)

- **Initial development of 9 logistics modules**
- **Initial development of user interface**
- **Initial development of help interface**
- **Initial documentation**

Phase II
(June 2010 – June 2011)

- **Continued development of 7 remaining logistics modules**
- **Continued development of user interface**
- **Inclusion of Risk analysis**
- **Conduct initial testing**

Phase III
(June 2011 – June 2012)

- **Continued testing**
- **Cost element structure updates**
- **Rates and factors, updates**
- **Develop tool enhancements**
- **Provide user support**
- **Configuration management**
- **Support SharePoint site**
- **Develop and conduct training events**

Background – Challenges Developing an LRFS

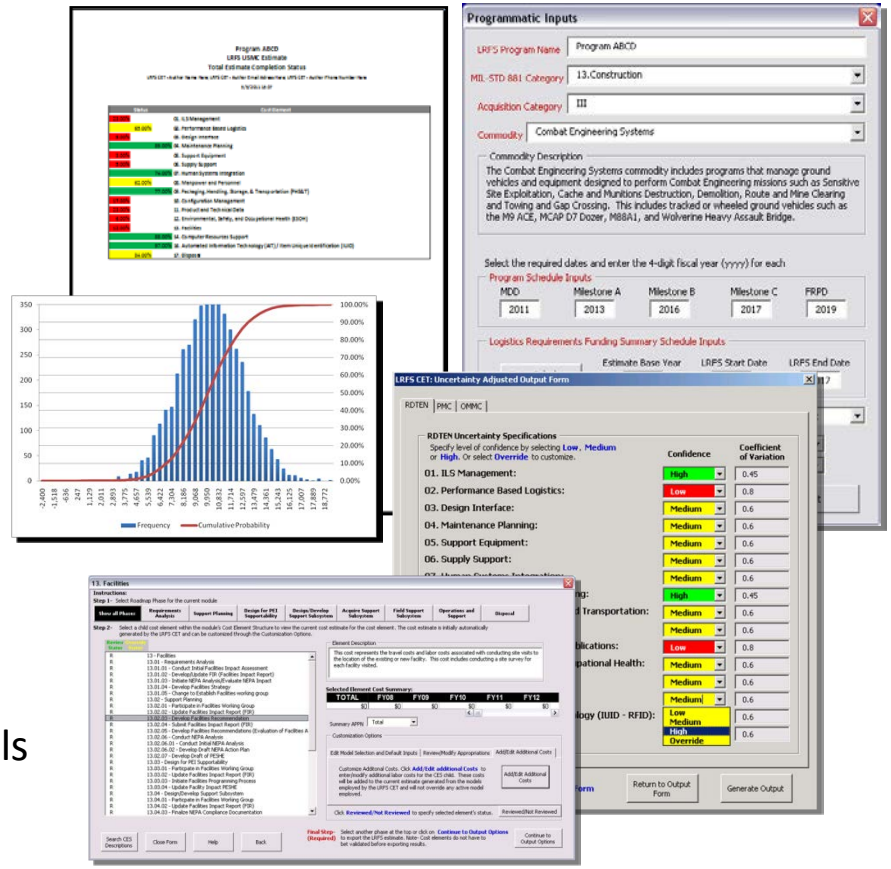
Logisticians are traditionally responsible for completing an LRFS. However, cost estimating skills often fall outside the logisticians' domain of expertise.

- Lack of cost estimating knowledge in developing LRFSs
- Lack of familiarity of financial management standards by the logistician
- Lack of standardization in Cost Element Structure (CES) and lack of sufficient supporting details
- Lack of sufficient data in conducting estimate (i.e., actuals, cost estimating factors, CERs, etc.)
- Inconsistent allocation of costs to their appropriate cost element (recurring/nonrecurring or functional elements)
- Inaccurate use of phasing, escalation factors, and appropriations
- Inconsistent review process

Background – Why do you need the LRFS CET?

The USMC LRFS Cost Estimating Tool (CET) is an **Excel-based user-friendly tool** designed to allow program managers and logisticians to **quickly generate LRFSs** for all types of Marine Corps programs. The LRFS CET includes a **library of cost models for all the IPS elements** and related disciplines and incorporate statutory and regulatory requirements. The USMC LRFS CET enables users to:

- Provide a more efficient, effective and accurate means of developing LRFSs
- Provide visibility of logistics support requirements
- Inform resource and assessment sponsors of logistics support requirements
- Serve as the format for presentation of support and associated funding requirements throughout program development at all acquisition milestone decision forums
- Can be tailored to meet the program's support objectives
- Support LCCE, POM submission, and budgetary decisions
- Assist in evaluating a weapon system's (or information system's) logistics costs associated with different proposals in a source selection



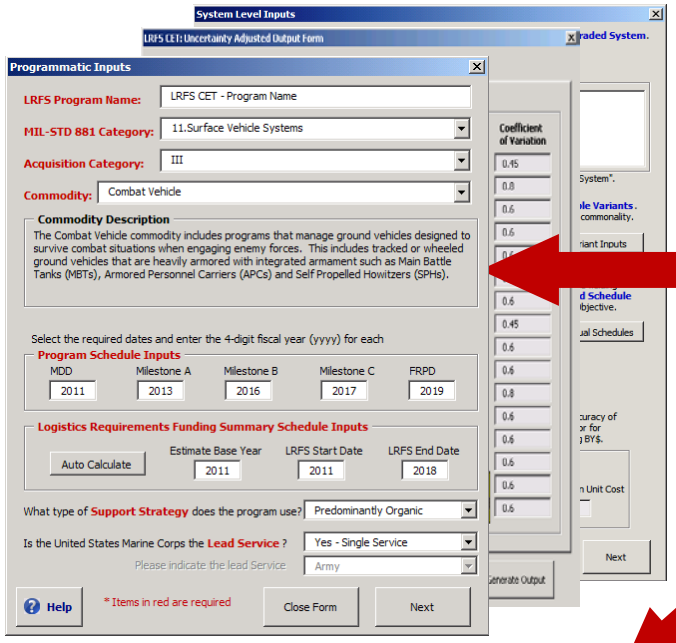
Background – Requirements and Constraints

- **Tool Must Be Excel 2007-based**
  - Users are familiar with Excel applications
  - Tool needs to run on existing USMC computers and software
  - Excel is powerful and integrates with VBA well
- **Tool Must Be User-Friendly**
  - Visual Basic user interface will guide users through the LRFS development process
  - User interface supports “Turbo Tax ™” approach for quick cost estimating
  - Tool will collect the information needed that is readily available to users
- **Tool Must Be Designed for Non-Cost Estimators**
  - Logisticians using the tool will have little or no cost estimating experience
  - Tool must have existing repository of cost models to develop estimate
  - Tool must provide documentation for cost models to allow users to defend estimates
  - Tool must provide a standard process for estimation within USMC
- **Tool Must Incorporate New Cost Element Structures (CES) for each USMC LRFS CET Module**
  - Previous CES does not include all logistic cost elements for a program
  - Previous CES is not standardized or defendable
  - CES must reflect the requirements included in the ILA Checklist
  - CES must be approved by SMEs and IPT members. Extensive SME/IPT participation is required

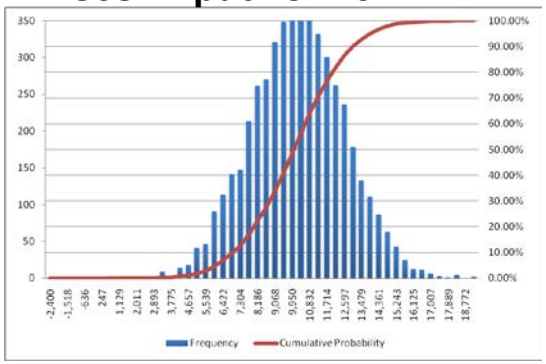
USMC LRFS CET Overview

USMC LRFS CET Overview – What is the USMC LRFS CET?

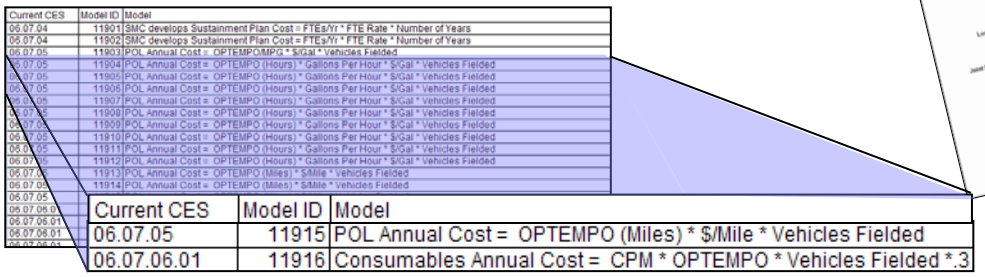
USMC LRFS Cost Estimating Tool Features



User Input Forms

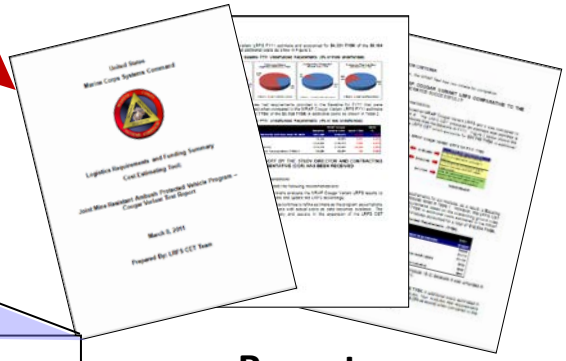


Uncertainty Analysis



Current CES	Model ID	Model
06.07.05	11915	POL Annual Cost = OPTEMPO (Miles) * $/Mile * Vehicles Fielded
06.07.06.01	11916	Consumables Annual Cost = CPM * OPTEMPO * Vehicles Fielded *.3

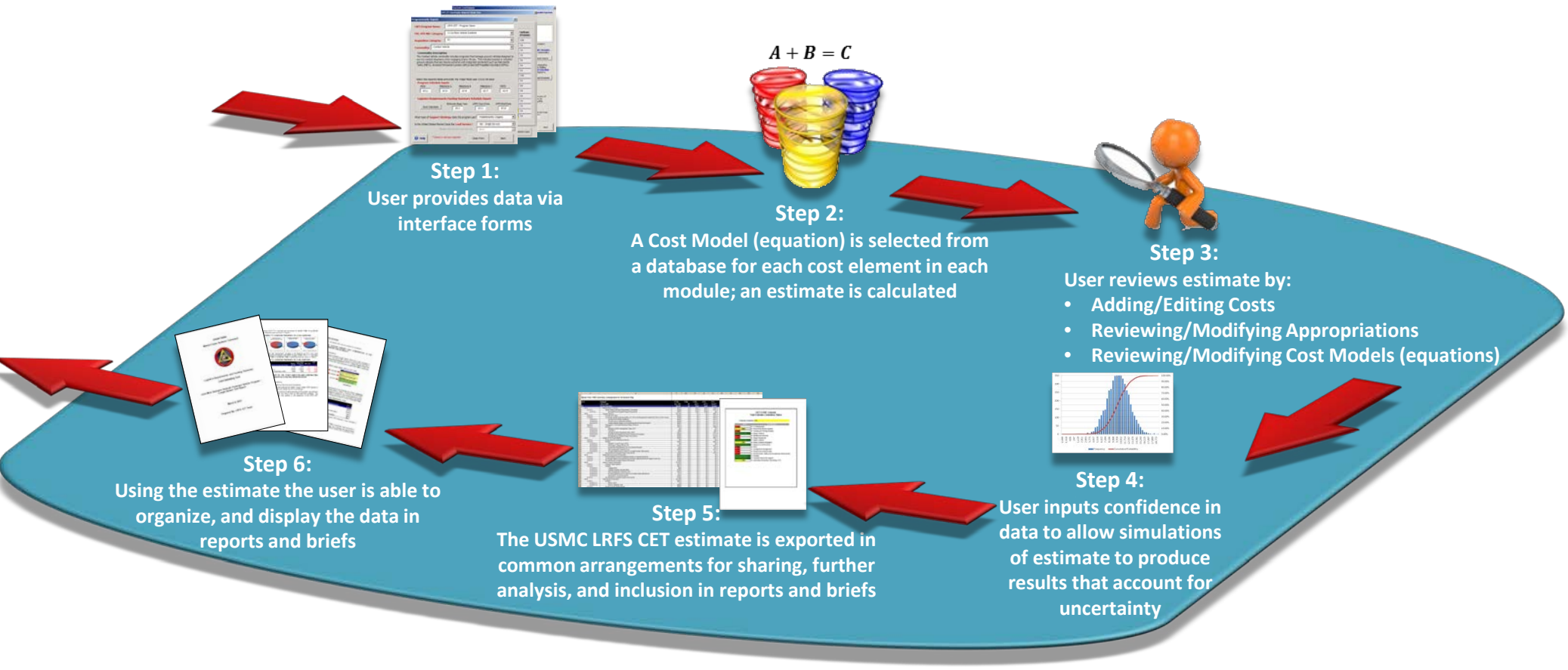
Cost Model Library



Reports

Standardized Cost Element Structure

USMC LRFS CET Overview – How the USMC LRFS CET Functions



Step 1:
User provides data via interface forms

Step 2:
A Cost Model (equation) is selected from a database for each cost element in each module; an estimate is calculated

Step 3:
User reviews estimate by:
- Adding/Editing Costs
- Reviewing/Modifying Appropriations
- Reviewing/Modifying Cost Models (equations)

Step 4:
User inputs confidence in data to allow simulations of estimate to produce results that account for uncertainty

Step 5:
The USMC LRFS CET estimate is exported in common arrangements for sharing, further analysis, and inclusion in reports and briefs

Step 6:
Using the estimate the user is able to organize, and display the data in reports and briefs

USMC LRFS CET Overview – User Interface

Programmatic Inputs

Gathers key inputs from user about the LRFS estimate being generated including:

- Estimate Name
- Mil-881 Category
- Acquisition Category
- Commodity Type
- Program Schedule
- LRFS Schedule
- Support Strategy
- Joint Program / Lead Service

System Level Inputs

Gathers key inputs from user about the program/system including:

- Program Status
- Variant Inputs
- Fielding Schedules
- System Costs

Module Selection Inputs

Allows the user to select a specific logistic module and provide key inputs for that module including:

- Module Interviews
- Module Specific Information
- Cost Element Search

Cost Element Inputs

Allows the user to further review and refine the estimate for the module they have selected with key inputs and operations including:

- Review Cost Elements by Roadmap Phase
- Model Selection Customization
- Additional Costs
- User Review Status
- Appropriations Customization
- Cost Element Search

Estimate Outputs

Allows the user to save and/or export results in various configurations including:

- Estimate Summary
- Completion Statistics
- Detailed Results
- “Popular” Results (LCSP, PIB Input, etc)
- Model Customization
- User Inputs
- Fielding Schedule
- Module Questionnaire Responses
- Appropriation Customization
- Uncertainty Calculation of Results

Interactive Help Feature

Provides assistance based on the user’s current location in the tool including:

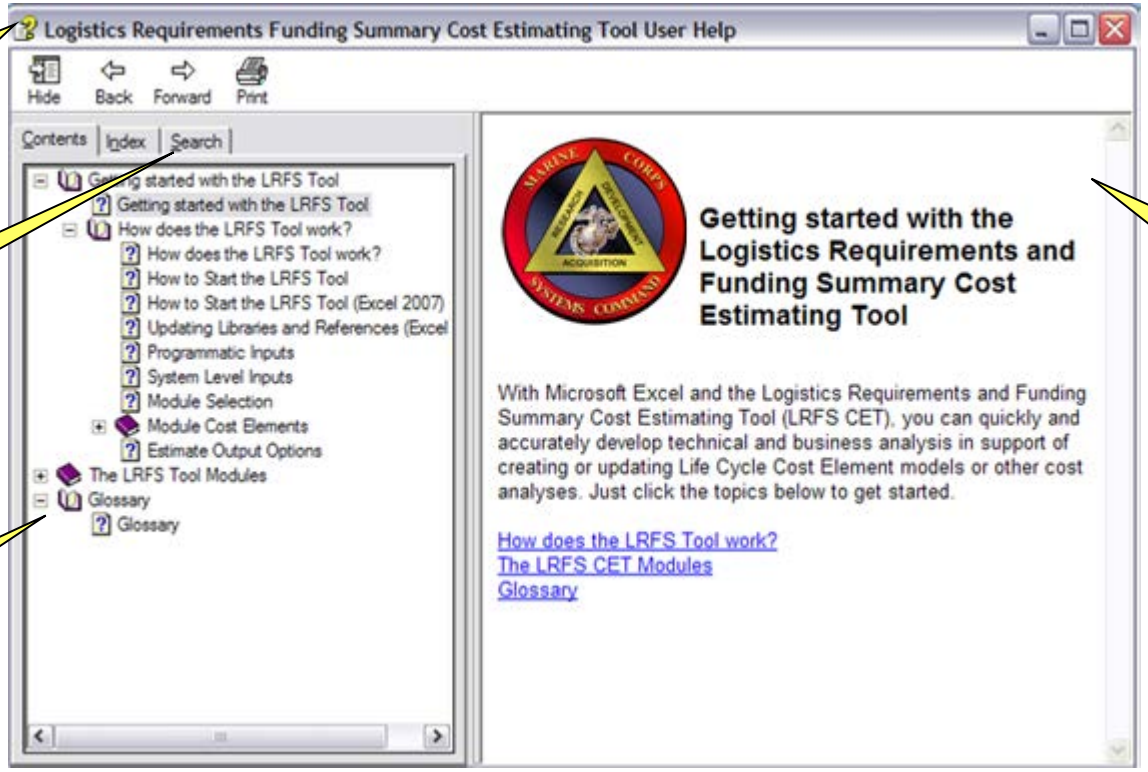
- Tool Navigation Help
- Definitions
- Common Cost Estimating Procedures
- Advanced Reference Material

USMC LRFS CET Overview – Interactive Help Feature

Can be accessed from any form in the tool at any time without interrupting the estimate by clicking "help" button

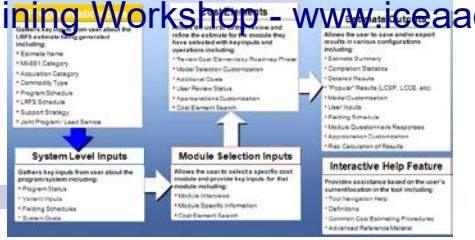
Browse or search capability

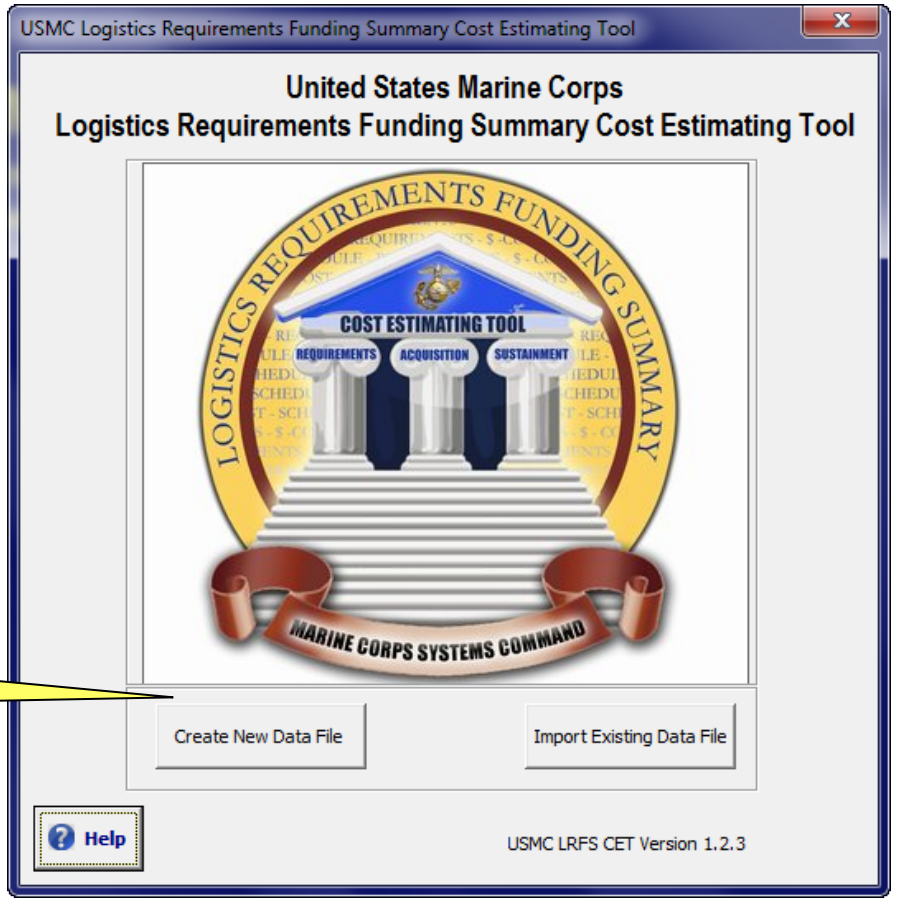
Detailed information available down to the cost element level



Automatically navigates user to appropriate topic based on location in the tool

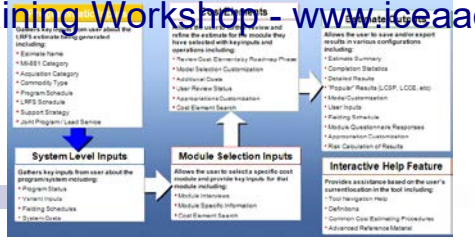
USMC LRFS CET Overview – Launch Interface





Interface allows user to create new data file or load existing data file

USMC LRFS CET Overview – Programmatic Inputs Interface



Interface prompts user to provide basic program information

Throughout the tool, "Tool Tips" provide quick information to the user on each data field

LRFS schedule is automatically generated based on user provided start date and base year

Available throughout the tool, users can provide notes for future user reference in the tool and outputs

Programmatic Inputs

LRFS Program Name: LRFS CET- Program Name

MIL-STD 881 Category: 7. Unmanned Aircraft Systems

Acquisition Category: II

Commodity: Unmanned Systems/Robotic System

Commodity Description

The Ammunition commodity includes programs that manage the ammunition and ordnances used to support Marine Corps weapon systems. This includes ammunition for small arms, assault rifles and heavy machine guns and ordnances for field artillery systems and guns of major combat vehicles.

This is a description of the commodity you have selected

Select the required dates and enter the 4-digit fiscal year (yyyy) for each

Program Schedule Inputs

MDD	Milestone A	Milestone B	Milestone C	FRPD
2013	2015	2018	2019	2021

Logistics Requirements Funding Summary Schedule Inputs

Auto Calculate | Estimate Base Year: 2012 | LRFS Start Date: 2012 | LRFS End Date: 2018

What type of Support Strategy does the program use? Predominantly OEM / 3rd Party

Is the United States Marine Corps the Lead Service ? Yes - Joint

Please indicate the lead Service USMC

* Items in red are required

Help | Notes | Close Form | Next

User is provided with on-screen explanation of the commodity selected

Tool allows user to provide program schedule dates and can accommodate omitted Milestones

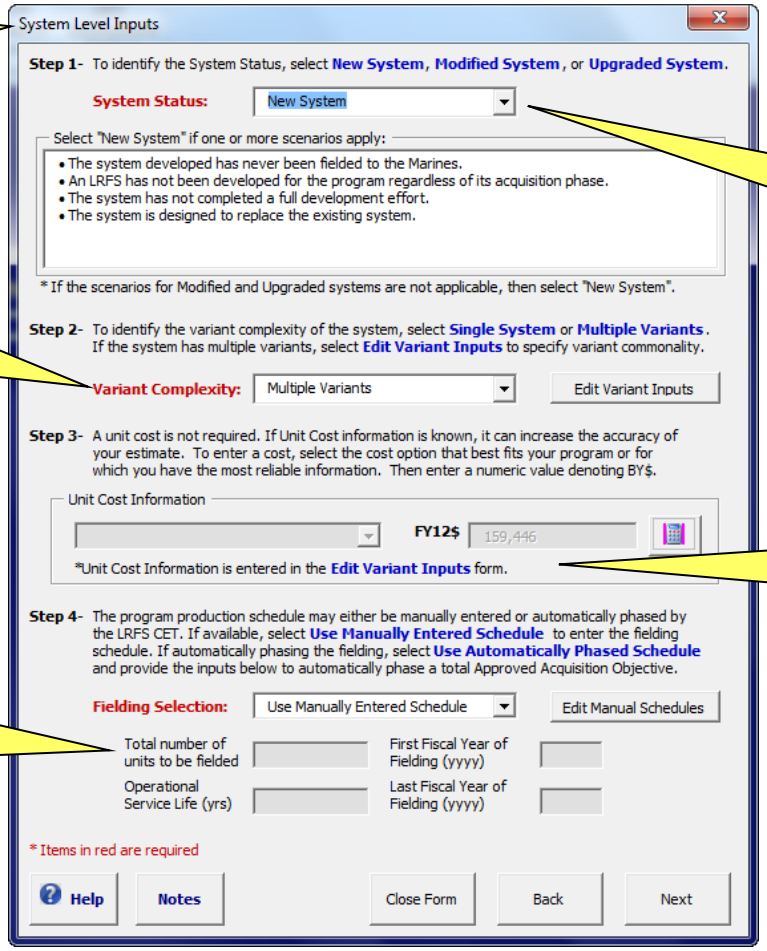
User can specify support specifics including strategy, joint program status, and lead service

USMC LRFS CET Overview – System Level Inputs Interface

Interface prompts user to provide basic information on the system

Can accommodate costs for multiple program variants within a family of systems

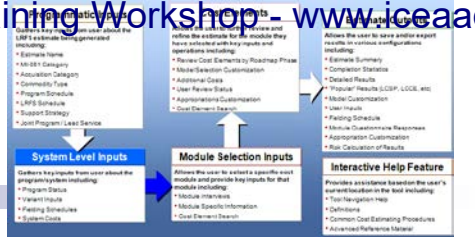
Can calculate an automatically phased fielding schedule or user may enter a specific schedule manually



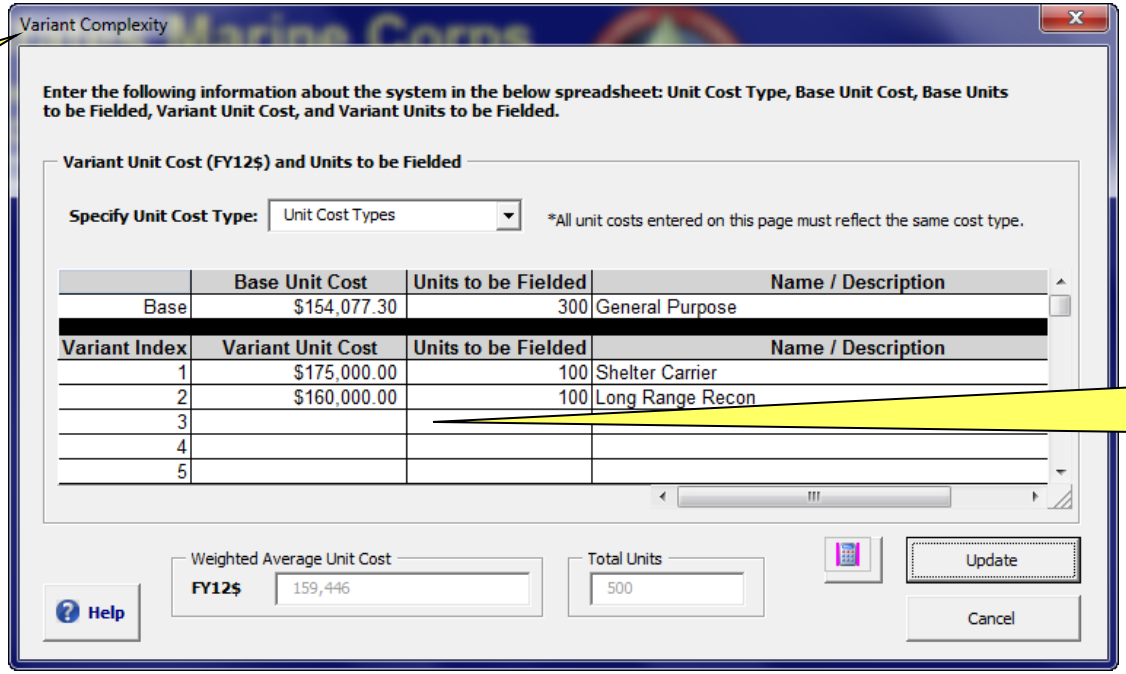
User can specify the status of the program and view an on-screen explanation of the program type selected

Although not required, the user may specify any or all of three types of system unit costs

USMC LRFS CET Overview – System Level Inputs: Variant Input

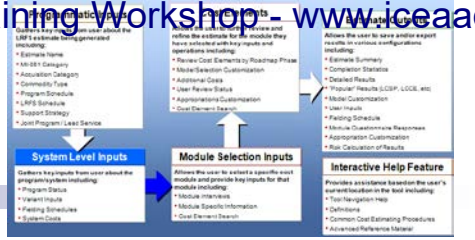


Interface allows user to provide input on commonality for each variant of the system



Individual fielding rates and costs can be accommodated for each variant

USMC LRFS CET Overview – System Level Inputs: Fielding



Interface allows user to provide various types of fielding information for the system

Schedule Selection

Display Schedule Description

1. Prototype
2. Low Rate Initial Producti
3. Full Rate Production
4. Fielding
5. MARFORS Fielded
6. Formal School Houses Fi

Schedule Description

The number of models on which a later system/item is formed or based to be procured in a given year.

Instructions:

Please enter the number of units associated with each Fiscal Year for applicable schedules. Please also enter the OPTEMPO associated with each of the five cumulative fielding designations. Any units are acceptable for OPTEMPO (e.g.; miles, hours, rounds etc.)

Manual Schedule and OPTEMPO Input

Operational Service Life (yrs): 15

Production and Fielding Schedules	TOTAL	FY09	FY10	FY11	FY12	FY13	FY14	FY15
Prototype	6				6			
Low Rate Initial Production	30					30		
Full Rate Production	470						470	
Fielding	500					30	470	
Cumulative Fielded Schedules	**OPTEMPO**	**FY09**	**FY10**	**FY11**	**FY12**	**FY13**	**FY14**	**FY15**
MARFORS Fielded						30	500	
Formal School Houses Fielded								
MPF/MCPP-N Fielded								
WRMR/MPF/MCPP-N Fielded								
MARFORS Reserves Fielded								
Disposing Schedule	**TOTAL**	**FY09**	**FY10**	**FY11**	**FY12**	**FY13**	**FY14**	**FY15**
Disposing	0							

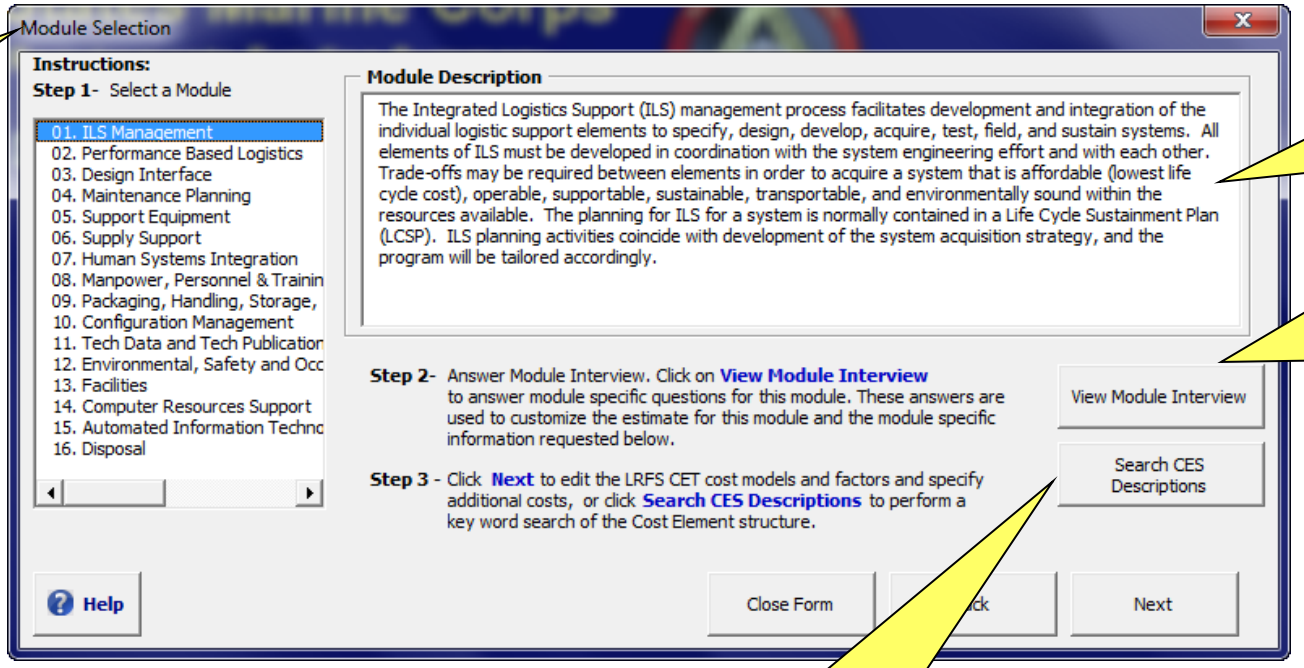
Total Units: 500

Help | Notes | Cancel | Apply Schedule

Precise schedule inputs at the Fiscal Year provide enhanced accuracy

USMC LRFS CET Overview – Module Selection Interface

Interface allows user to review and refine module level information



User is provided with an on-screen explanation of the cost module selected

User has the opportunity to answer a module specific questionnaire to refine the estimate

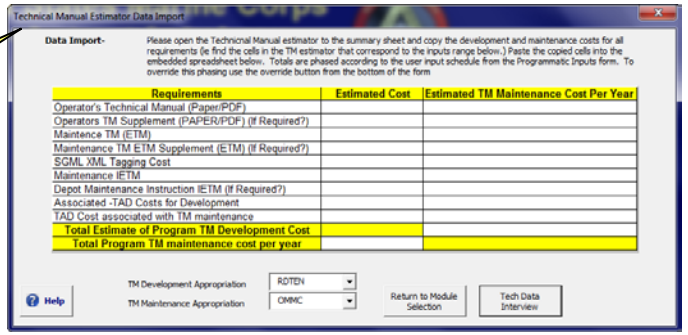
Keyword search identifies which modules contain specific cost elements

USMC LRFS CET Overview – Module Interview Interface

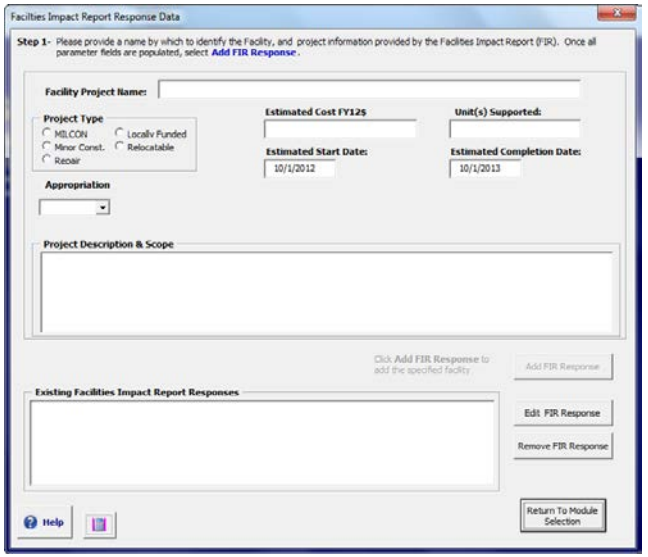
Dynamic Interface displays a separate Module Interview for the cost module selected

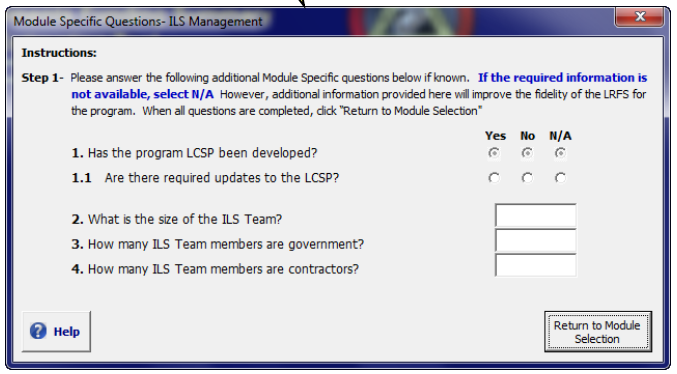
In addition to dynamic interview questions, capability of importing data from existing support tools is offered

AC ALPS Tech Manual Estimator

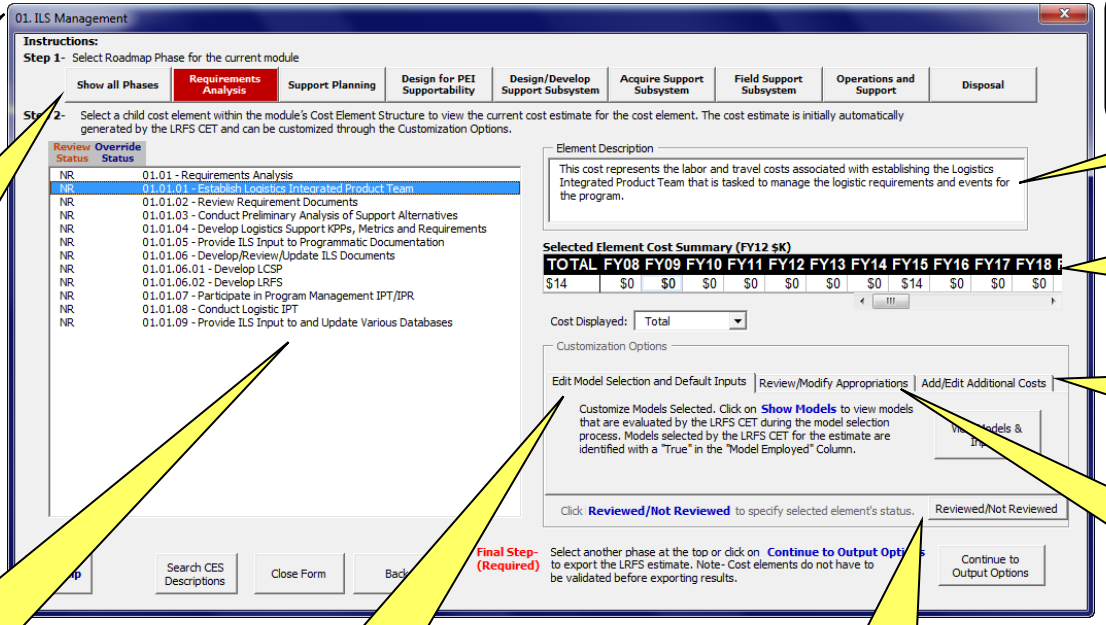


AC ALPS Facilities Impact Report Response





USMC LRFS CET Overview – Cost Element Interface



Dynamic Interface displays specific information for cost module selected

User is provided with an on-screen explanation of the cost element selected

Summary row displays phased costs for each cost element

User selected organization of cost elements by AC ALPS Roadmap phase allows focus on specific elements at any given time

Additional cost feature allows advanced users to add specific costs

Appropriation feature allows users to customize the appropriation for each cost element

Cost element list allows user to quickly navigate and identify reviewed and overridden cost elements

Model override feature allows advanced users to control cost models

Confirmation feature allows users to flag reviewed cost elements

USMC LRFS CET Overview – Additional Costs Interface

Dynamic Interface allows the input of four types of additional costs without leaving the form

Add/Edit Additional Cost - 13.01.04 - Develop Facilities Strategy

Step 1- Select the type of cost you wish to add/edit by clicking on a tab below. Enter all costs in Base-Year **(FY12$)**

Facilities | Labor | Travel | Miscellaneous

Step 2- Verify Appropriation (default pre-selected); enter all **Travel Parameters** and the **Annual Number of Attendees**

Travel Parameters

Appropriation: RDTEN

Trip Duration (days)

Total Transportation Cost Per Attendee ($)
Airfare | Car Rental

Travel Location and Season

Destination State	Destination City	Travel Season
Hawaii	Bolingbrook / Romeo	01-Oct - 30-Nov
Idaho	Chicago	01-Dec - 30-Apr
Illinois	Elgin / Aurora	01-May - 30-Jun
Indiana	Oak Brook Terrace	01-Jul - 31-Aug
Iowa	O'Fallon / Fairview H	01-Sep - 30-Sep
Kansas	Springfield	
Kentucky		

Per Diem Rates per Attendee ($)

	Default	Override	User Input Cost
Lodging	$161.66	☐	
Meals and Incidental	$65.90	☐	

Annual Number of Attendees

TOTAL	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17
0										

Optional: Notes

Update Trip

To edit or remove previously entered travel costs, select the item in the list box below and click **Edit Trip** or **Remove Trip**.

Existing Additional Travel Costs

Edit Trip

Remove Trip

Help

Return to CES Form

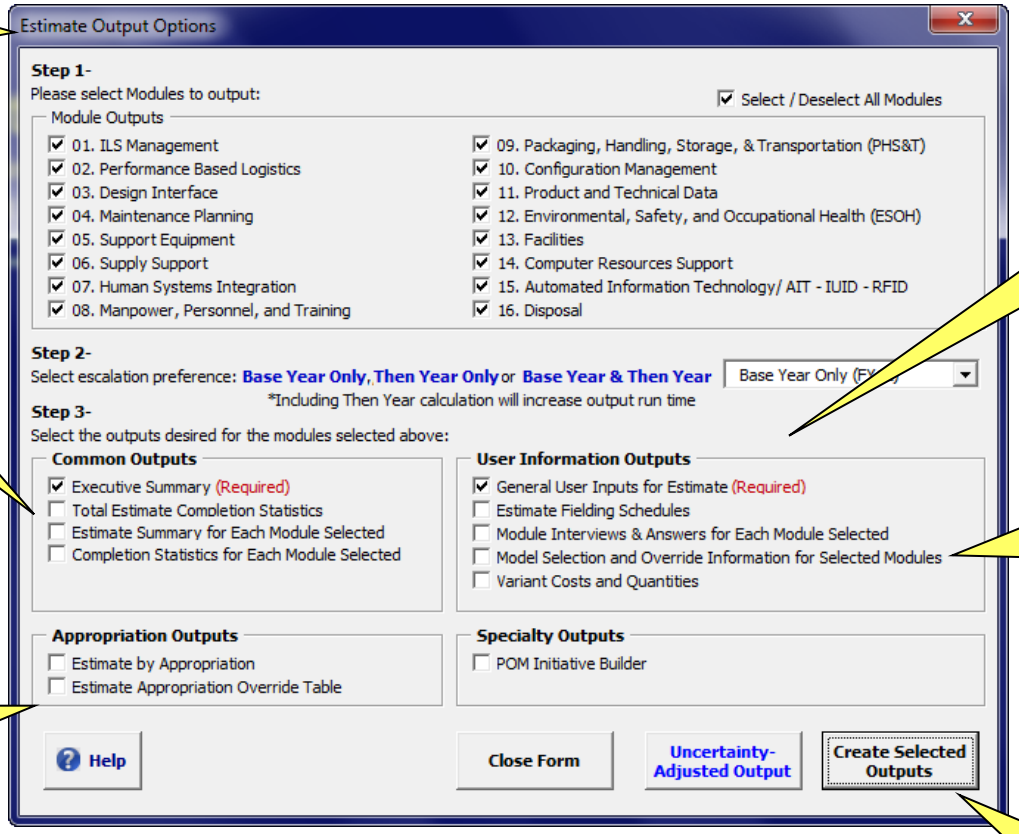
Embedded databases allow user identify cost factors including Travel location, Per diem rates, Facility location, labor rates, and more

USMC LRFS CET Overview – Estimate Output Interface

Interface allows user to select specific results to output for specific cost modules

Completion statistics illustrate percentage of estimate reviewed by user

Selections allow the output of the estimate by appropriation quickly and easily



User provided information can be outputted for future reference

Selections allow the output of any model adjustments made

Results can be exported for use in other documents or saved

USMC LRFS CET Overview – Uncertainty: Confidence Interface

Form is accessed from *Uncertainty Calculation* button located on LRFS CET Outputs Form

Separate tab for each appropriation

User is provided with inputs for confidence level for each module

Customization for each module available coefficient of variation input

Calculation of 10,000 trials (maximum trails) for all modules estimated to be less than 10 minutes

LRFS CET: Uncertainty Adjusted Output Form

RDTEN | PMC | OMMC | MPMC

RDTEN Uncertainty Specifications

Specify level of confidence by selecting Low, Medium or High. Or select Override to customize.

	Confidence	Coefficient of Variation
01. ILS Management:	High	0.45
02. Performance Based Logistics:	Low	0.8
03. Design Interface:	Medium	0.6
04. Maintenance Planning:	Medium	0.6
05. Support Equipment:	Medium	0.6
06. Supply Support:	Medium	0.6
07. Human Systems Integration:	Medium	0.6
08. Manpower Personnel and Training:	High	0.45
09. Packaging Handling Storage and Transportation:	Medium	0.6
10. Configuration Management:	Medium	0.6
11. Technical Data and Technical Publications:	Low	0.8
12. Environmental, Safety and Occupational Health:	Medium	0.6
13. Facilities:	Override	.7
14. Computer Resources Support:	Medium	0.6
15. Automated Information Technology (IUID - RFID):	Low / Medium / High / Override	0.6
16. Disposal:		0.6

Help

Select Generate Output to generate Risk Adjusted output, or select Return to Output Form to cancel and return to output form.

Return to Output Form

Generate Output

USMC LRFS CET Overview – Uncertainty: Outputs

Uncertainty output for each module is replicated for each appropriation

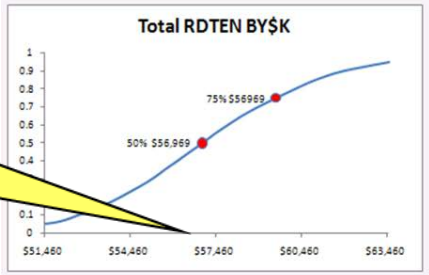
Cost values for all CES elements stored at multiple confidence levels by APPN

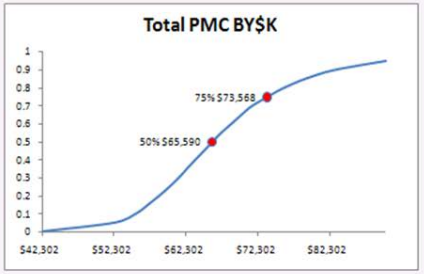
Confidence Level Displayed: Point Estimate

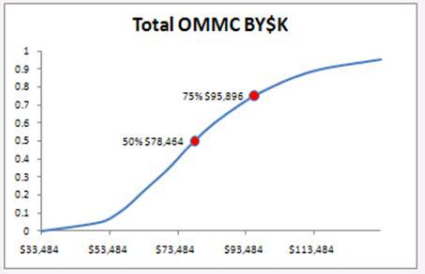
Element		TOTAL	FY11	FY12	FY13
LRFS USMC		$49,095	$0	$4,741	$1,917
ILS Management		$7,776	$0	$843	$645
Performance Based Logistics		$1,741	$0	$125	$0
Design Interface		$8,875	$0	$577	$577
Maintenance Planning		$1,602	$0	$243	$158
Support Equipment		$1,319	$0	$437	$303
Supply Support		$2,924	$0	$0	$0

Point Estimate
Mean
20%
30%
40%
50%
60%
70%

Customizable cumulative probability charts generated for each estimate for each appropriation







Summary Statistics BY$K	RDTEN	PMC	OMMC
Mean	$57,169	$67,994	$83,661
StDeV	$3,675	$12,199	$27,008
CV	6%	18%	32%

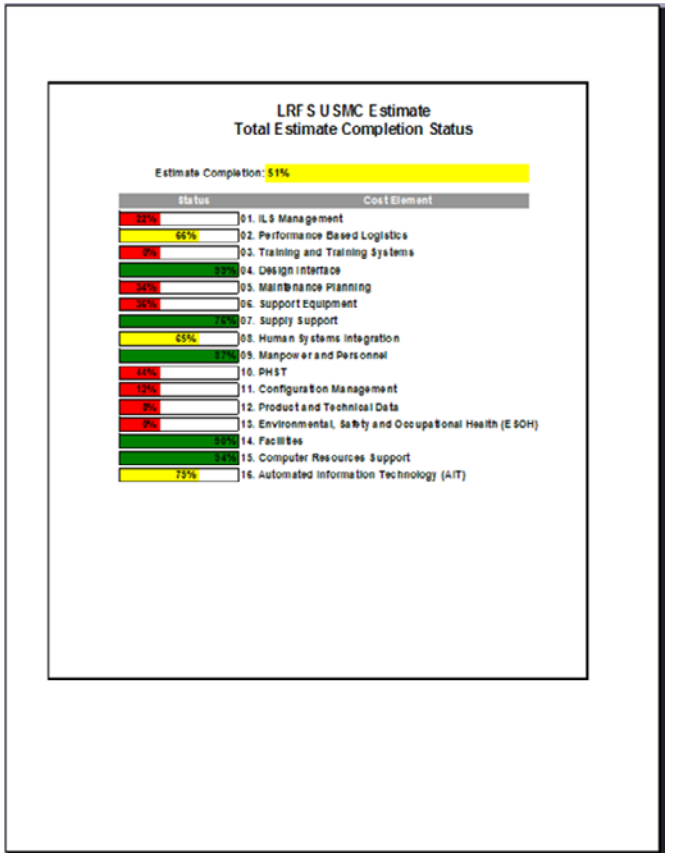
Table of popular data point values provided for each appropriation

USMC LRFS CET Overview – Estimate Example Outputs

Once the LRFS CET output options have been selected, corresponding data is exported to a separate workbook for use in further calculations, briefs, and documents

Base-Year 10$K Summary Unadjusted for Schedule Slip

CES	Element	TOTAL	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16
	LRFS USMC	$27,788	$0	$713	$713	$5,977	$3,845	$7,482	$3,568	$2,757	$1,366
04	Design Interface	$8,460	$0	$238	$238	$1,646	$1,018	$2,327	$1,179	$908	$453
04.01	Requirements Analysis	$577	$0	$238	$238	$102	$0	$0	$0	$0	$0
04.01.01	Define Design Interface Requirements Traceability	$306	$0	$102	$102	$102	$0	$0	$0	$0	$0
04.01.02	Develop/Review/Update Program Documents	$272	$0	$136	$136	$0	$0	$0	$0	$0	$0
04.02	Support Planning	$2,174	$0	$0	$0	$997	$839	$225	$113	$0	$0
04.02.01	Provide AOA Input	$225	$0	$0	$0	$113	$113	$0	$0	$0	$0
04.02.02	Coordinate System Engineering Plan and Life Cycle Management Sustainment Plan common issues	$789	$0	$0	$0	$338	$338	$113	$0	$0	$0
04.02.02.01	Develop RAM Design Guidelines	$225	$0	$0	$0	$113	$113	$0	$0	$0	$0
04.02.02.02	Provide input to readiness modeling	$338	$0	$0	$0	$113	$113	$113	$0	$0	$0
04.02.02.03	Assess detailed design enviornments/system thresholds impacts	$225	$0	$0	$0	$113	$113	$0	$0	$0	$0
04.02.03	Participate in Technical/Production/Design Reviews	$451	$0	$0	$0	$113	$113	$113	$113	$0	$0
04.02.04	DMSMS	$573	$0	$0	$0	$298	$276	$0	$0	$0	$0
04.02.04.01	Establish DMSMS Management Team (DMT)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
04.02.04.02	Train DMT	$22	$0	$0	$0	$22	$0	$0	$0	$0	$0
04.02.04.03	Develop DMSMS Management Plan (DMP)	$315	$0	$0	$0	$157	$157	$0	$0	$0	$0
04.02.04.04	Evaluate Technologies and tools to support the program	$236	$0	$0	$0	$118	$118	$0	$0	$0	$0
04.02.05	Develop/Review/Update Program Documents	$136	$0	$0	$0	$136	$0	$0	$0	$0	$0
04.03	Design for PEI Supportability	$726	$0	$0	$0	$547	$179	$0	$0	$0	$0
04.03.01	Define Parts and Materials Guidance	$8	$0	$0	$0	$8	$0	$0	$0	$0	$0
04.03.02	DMSMS	$582	$0	$0	$0	$403	$179	$0	$0	$0	$0
04.03.02.01	Establish Formal Program (DMT)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
04.03.02.02	Participate in Design Review IPT	$157	$0	$0	$0	$157	$0	$0	$0	$0	$0
04.03.02.03	Incorporate Requirements into Procurement Request	$45	$0	$0	$0	$45	$0	$0	$0	$0	$0
04.03.02.04	Risk Assessment Predictive Tool	$358	$0	$0	$0	$179	$179	$0	$0	$0	$0
04.03.02.05	Provide logistics input to a BCA to Evaluate Design Alternatives	$21	$0	$0	$0	$21	$0	$0	$0	$0	$0
04.03.03	Develop/Review/Update Program Documents	$136	$0	$0	$0	$136	$0	$0	$0	$0	$0
04.04	Design/Develop Support Subsystem	$587	$0	$0	$0	$0	$0	$429	$157	$0	$0
04.04.01	Provide logistics inputs and assess impacts of engineering efforts	$315	$0	$0	$0	$0	$0	$157	$157	$0	$0
04.04.02	Coordinate logistics and engineering interfaces regarding DMSMS mitigation planning	$136	$0	$0	$0	$0	$0	$136	$0	$0	$0
04.04.03	Develop/Review/Update Program Documents	$136	$0	$0	$0	$0	$0	$136	$0	$0	$0
04.05	Acquire Support Subsystem	$1,579	$0	$0	$0	$0	$0	$941	$319	$319	$0
04.05.01	Conduct Test/Analyses	$472	$0	$0	$0	$0	$0	$157	$157	$157	$0
04.05.02	DMSMS	$971	$0	$0	$0	$0	$0	$647	$162	$162	$0
04.05.02.01	Validate BOM	$99	$0	$0	$0	$0	$0	$99	$0	$0	$0
04.05.02.02	Validate Possible Obsolete Items	$162	$0	$0	$0	$0	$0	$162	$0	$0	$0
04.05.02.03	Risk Asssessment Predictive Tool	$215	$0	$0	$0	$0	$0	$215	$0	$0	$0
04.05.02.04	Provide logistics inputs to a BCA to evaluate design alternatives	$11	$0	$0	$0	$0	$0	$11	$0	$0	$0
04.05.02.05	Participate in Technical Data IPT	$485	$0	$0	$0	$0	$0	$162	$162	$162	$0
04.05.03	Develop/Review/Update Program Documents	$136	$0	$0	$0	$0	$0	$136	$0	$0	$0
04.06	Field Support Subsystem	$1,495	$0	$0	$0	$0	$0	$304	$298	$298	$298
04.06.01	DMSMS	$815	$0	$0	$0	$0	$0	$168	$162	$162	$162
04.06.01.01	Review BOM	$7	$0	$0	$0	$0	$0	$7	$0	$0	$0
04.06.01.02	Review Reliability Data	$809	$0	$0	$0	$0	$0	$162	$162	$162	$162
04.06.02	Monitor/Update Test/Analyses	$679	$0	$0	$0	$0	$0	$136	$136	$136	$136



Future Areas of Interests

Future Areas of Interests

USMC LRFS CET Training/Support Sustainment

- Training
  - Initial Training (New Hire/First Time User)
  - Legacy Training (Current Users)
  - Advanced Training (Seasoned Users)
- Support
  - Demonstrations
  - User Assistance
  - SharePoint Site

USMC LRFS CET Cost Analysis Sustainment

- Rates and factors updates
- What-if Scenario Analysis
- Statute and Policy Alignment Issues
- Increased Sensitivity of Methodology

USMC LRFS CET Tool Sustainment

- Administration and Visual Basic maintenance
- Platform / Application environment issues
- Outputs
- Module updates

USMC LRFS CET Enhancements

- Ad hoc enhancements to fit emerging needs
- Additional Risk Features
- Total Ownership Costs
- Average Operations and Support Costs in a "Typical" Mid-Life Year
- Expand the tool to other services
- Upgrade platform (.NET, SharePoint, Etc.)

Recognition

USMC LRFS CET: Recognition

Acquisition Excellence Day
June 8, 2011
MCSC Commander's Excellence in Operations Research Systems Analysis Award

Society of Cost Estimating and Analysis (SCEA) – Washington Area Chapter
January 25, 2012
2011 Technical Team Achievement Award

I am very confident this will greatly enhance our ability to plan, justify and defend our future POM efforts.
- Logistics Chief PM NV/RSTA, PEO IEW&S

The tool will reap a lot of goodwill and create efficiencies that Defense Secretary has been looking for in the Acquisition community.
- Log Ops Spt Tm Lead, AC ALPS, MCSC

The LRFS tool has a lot of great benefits and will become a very valuable tool for all logisticians.
- PEO Integrated Warfare Systems, IWS, U.S. Navy


LOGISTICS REQUIREMENTS FUNDING SUMMARY
COST ESTIMATING TOOL
REQUIREMENTS
ACQUISITION
SUSTAINMENT
MARINE CORPS SYSTEMS COMMAND

Summary

USMC LRFS CET – Summary of Benefits

Generates LRFS Cost Estimates Automatically

The USMC LRFS Cost Estimating Tool produces quick cost estimates and provides results ready for POM input and the ILA process

- Automatically generates a complete estimate based on provided input
- Override capabilities allow for estimates to be tailored to specific program requirements
- Exported data organized to support quick discovery of results for inclusion in other processes, briefs, and documents (LCSP, CARD, LCCE, PIB, etc)

Provides Cost Estimating Capability to Logisticians

The USMC LRFS Cost Estimating Tool prompts the user for data and compiles the inputs directly into relevant cost models

- Minimal training required to get started
- Step-by-step interface guides logisticians though cost estimating processes with fields designed specifically for users unfamiliar with LRFS Cost Estimating
- Searchable Cost Element Structure identifies logistics elements
- Programmatic information requested is often readily available
- Context-sensitive, interactive help features allow for browsing or searching for answers effectively

Uses Built-in Cost Methodologies

The USMC LRFS Cost Estimating Tool does all the calculations for the user with accuracy

- Interface designed to input appropriate data for the estimate
- Uses a repository of documented cost model data
- Provides uncertainty analysis capabilities
- A review indication helps keep track of progress and cost elements that have been checked for inaccuracies
- Automatically adjusts estimates with latest rates and factors

Conforms to USMC Acquisition and Logistics Best Practices

The USMC LRFS Cost Estimating Tool supports MARCORSYSCOM / PEO LS initiatives

- Standardized LRFS Cost Element Structure (CES) and process
- Utilizes latest AC ALPS Logistics Roadmap
- Compatible with the IPS Elements
- Facilitates the inclusion of LRFS results in the LCCE
- Logistics requirements identified for POM submission (PIB)

Questions?

MARCORSYSCOM
Marine Corps Systems Command
www.marcorsyscom.usmc.mil

ROBIN L. HOWARD
Life Cycle Logistics

CMDR, MARCORSYSCOM
2200 Lester St
Quantico, VA 22134-6050

(703) 432-3521 (DSN 378)
(571) 436-8425 (BB)
robin.howard@usmc.mil

MARCORSYSCOM
Marine Corps Systems Command
www.marcorsyscom.usmc.mil

DAVID G. MAYLUM
Operations Research Analyst

CMDR, MARCORSYSCOM
2200 Lester St
Quantico, VA 22134-6050

(703) 432-3987
(703) 432-3538 (Fax)
david.maylum@usmc.mil

Charles Gu
Lead Associate
Booz | Allen | Hamilton
Booz Allen Hamilton Inc.
Tel (703) 984-3993
Gu_Charles@bah.com

John Ko
Associate
Booz | Allen | Hamilton
Booz Allen Hamilton Inc.
Tel (703) 984-0596
Ko_John@bah.com

Jeremy Eden
Associate
Booz | Allen | Hamilton
Booz Allen Hamilton Inc.
Tel (703) 377-5871
Eden_Jeremy@bah.com

Aaron Greenwald
Consultant
Booz | Allen | Hamilton
Booz Allen Hamilton Inc.
Tel (703) 377-5616
Greenwald_Aaron2@bah.com

James Boswell
Senior Consultant
Booz | Allen | Hamilton
Booz Allen Hamilton Inc.
Tel (703) 432-5010
Boswell_James@bah.com

Zachary Pryor
Associate
Booz | Allen | Hamilton
Booz Allen Hamilton Inc.
Tel (703) 984-1726
Pryor_Zachary@bah.com


LOGISTICS REQUIREMENTS FUNDING SUMMARY
COST ESTIMATING TOOL
REQUIREMENTS
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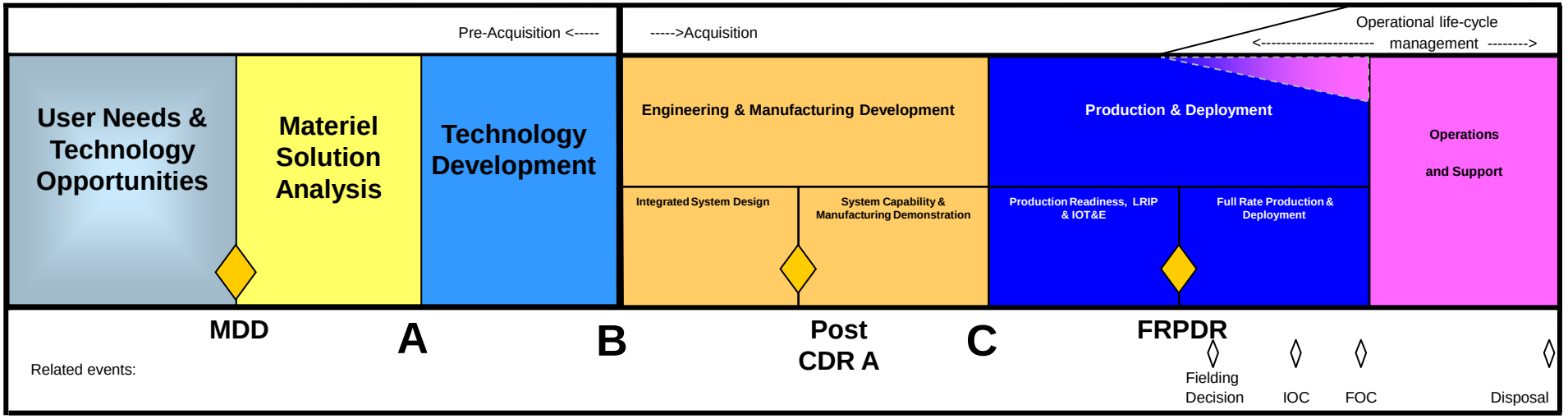
MARINE CORPS SYSTEMS COMMAND

Backups

Background – LRFS Relationship to LCCE



Past

(LRFS) (LRFS) LCCE

LRFS LCCE

LRFS LCCE

Present

(LRFS) LRFS LCCE

LRFS LCCE

LRFS LCCE

LRFS LCCE

(LRFS)

Legend:

(LRFS) – an LRFS may or may not occur

LRFS – LRFS Required

LCCE – LCCE Required

Crosswalk – LRFS to LCCE

- **The LRFS feeds into the LCCE but the two do not merge precisely.**
  - The timeframe of interest for the LCCE tends to be longer than the LRFS
  - Some LRFS elements crosswalk directly to the LCCE (e.g.; *Initial Spares*)
  - Other LRFS elements are only a portion of the costs seen in a LCCE element (e.g *Costs of Conducting Initial PBL BCA* and *Detailed PBL BCA* is part of the SEPM Cost)

LCCE timeframe (System Dependent)

	Element ($K)	Total	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20
LCCE	Systems Engineering / Program Management	$9,500	$800	$950	$950	$800	$1,000	$1,000	$800	$800	$800	$800	$800
Shared	Initial Spares	$1,150	$0	$0	$0	$0	$0	$0	$0	$750	$400	$0	$0
LRFS	Initial PBL BCA	$300	$0	$150	$150	$0	$0	$0	$0	$0	$0	$0	$0
	Detailed PBL BCA	$400	$0	$0	$0	$0	$200	$200	$0	$0	$0	$0	$0

LRFS timeframe (7 Years)

Training, Demonstration and Testing

USMC LRFS CET Testing – MRAP (1 of 2)

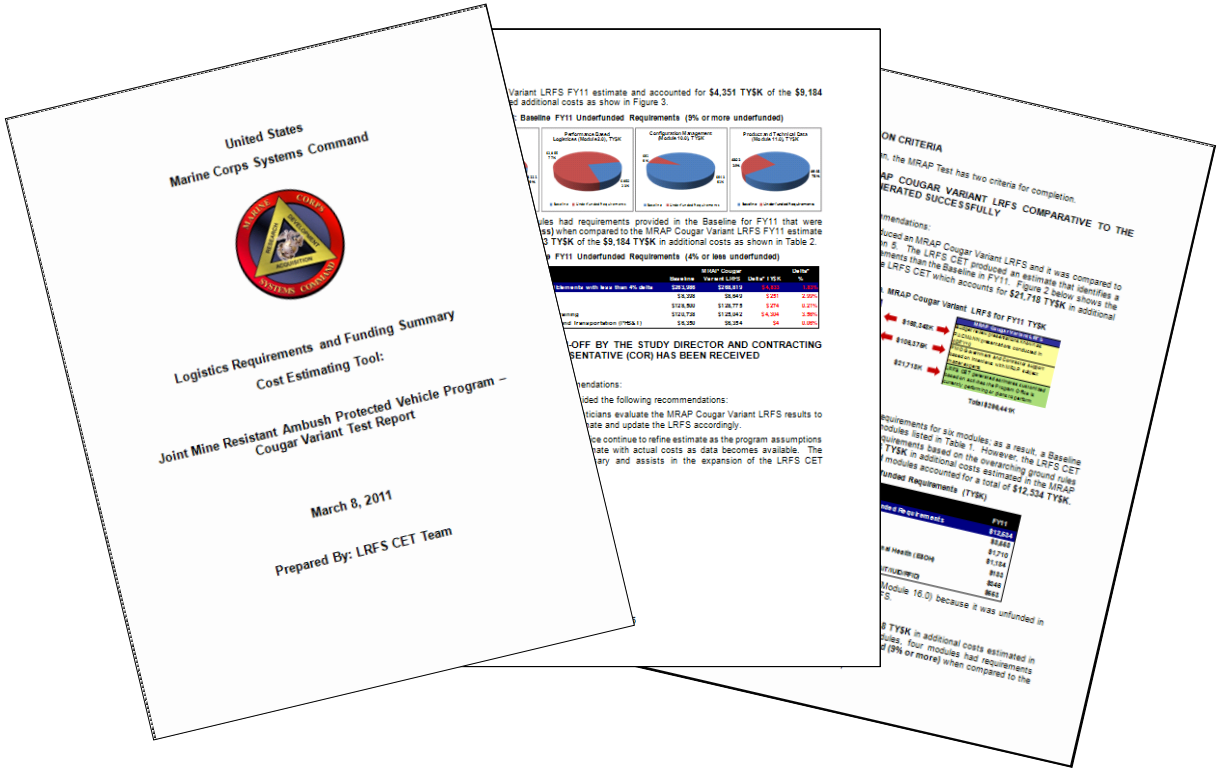
Mine Resistant Ambush Protected Vehicle (MRAP) Program - Cougar Variant was chosen to test the capability of the tool to accommodate unique programs

- Test objectives included:
  - Create a USMC LRFS for the MRAP program Cougar variant
  - Validate and document the LRFS CET as dictated by the Test Plan to determine if the LRFS CET suitable for deployment

- The MRAP Program is unique from other urgent needs ACAT I-D program in two ways:
  - The MRAP Program Office conducted an open competition which required a review of several designs from various contractors in a short period of time to accommodate the aggressive and accelerated program schedule. The review allowed the program to determine the final design of the Cougar vehicles which are grouped into two vehicle categories (CAT I and CAT II) each represented by several variants
  - The MRAP Program Office continued to redesign the vehicles through a series of Engineering Change Proposals (ECPs) within a year of the Full Rate Production Decision (FRPD which significantly deviated from the normal acquisition process

USMC LRFS CET Testing – MRAP (2 of 2)

The LRFS CET produced an estimate that identifies a more comprehensive set of requirements than the Baseline in FY11


United States
Marine Corps Systems Command

Logistics Requirements and Funding Summary
Cost Estimating Tool:

Joint Mine Resistant Ambush Protected Vehicle Program – Cougar Variant Test Report

March 8, 2011

Prepared By: LRFS CET Team

USMC LRFS CET Testing – Usability and Performance (1 of 3)

The primary purpose of testing was to ensure that that the USMC LRFS CET accommodates users of varying computer, logistics, technical, and cost estimating expertise and provides them with the functionality to develop cost estimates.

- To ensure tool quality, the test ensured that the test objectives were met by answering:
  - Does the tool exist on the MS Excel 2007 Platform within the MS Windows XP Operating System?
  - Does the USMC LRFS CET verify ease of learning and understanding of the tool with testers that have varying computer experience?
  - Can the tool be considered as “user-friendly” and intuitive for Logistics Requirements Funding Summary Cost Estimating?
  - Does the tool provide the capability to address programs’ costs, schedules, and factors with USMC participation to provide a sufficiently accurate cost estimate given minimal information and expertise?
  - Was the user able to use the tool with the training provided in order to develop the cost estimate? In other words, was the training adequate?
  - Was the user able to navigate the tool easily using the help menu?
  - Does the tool meet the functional needs of the user in developing the cost estimate?
  - Does the user feel confident that they will be able to use the tool in the future?

USMC LRFS CET Testing – Usability and Performance (2 of 3)

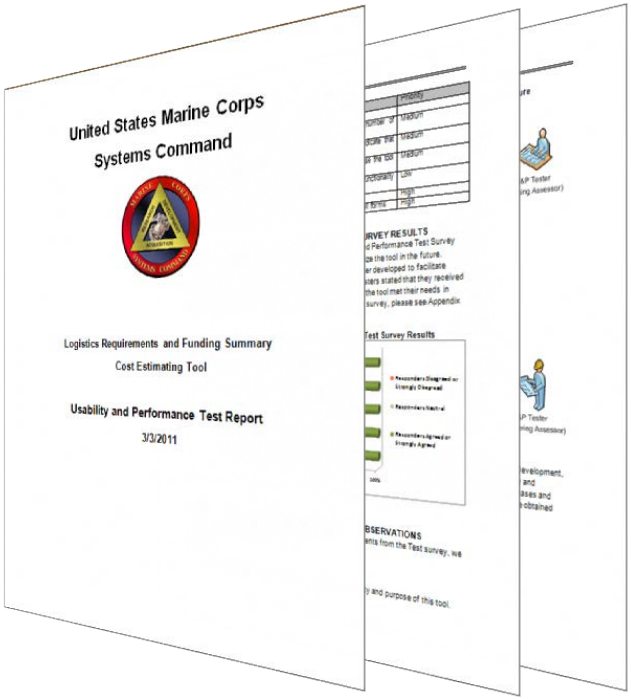
Test Event Details:

- Test conducted on 1-31-11 through 2-2-11
- LRFSs created for four test programs
- Briefs created for each test program and presented to mock ILA review panel
- Continuous learning points awarded to participants

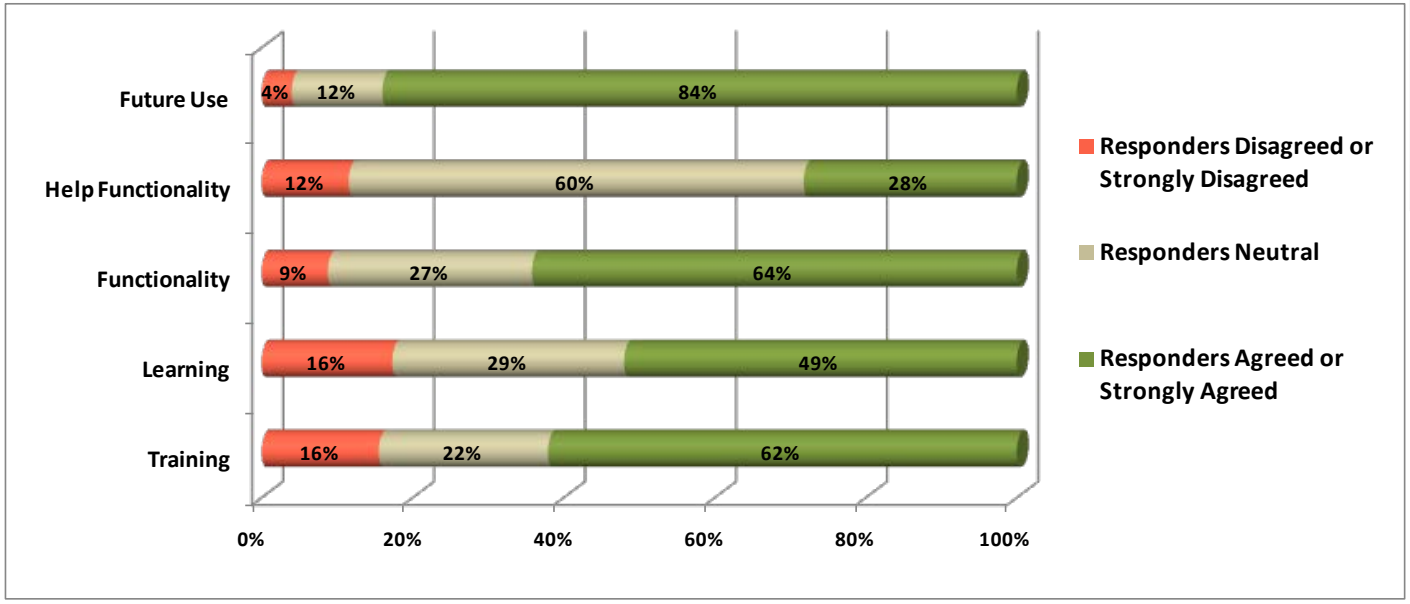
USMC LRFS CET Testing – Usability and Performance (3 of 3)

Test Results:

- 20 completed Test Participant Surveys were collected for the test
- 39 completed Test Incident Report Forms were collected for the test
- Usability and Performance Test Report



Overview of Usability and Performance Test Survey Results



USMC LRFS CET – Demonstration and Training

Demonstrations

Create awareness of the USMC LRFS CET by providing overviews of tool capabilities, benefits, and application to USMC/DOD services.

Demonstrations provided to:

MARCORSYSCOM
- MRAP
- AC PROG
- GCSS-MC
- PEO Land Systems
- All Product Groups
- PM TRASYS, et al

Army
- CECOM
- ODASA-CE
- PEO IEW&S
- PEO Soldier
- NV/RSTA

Navy
- NAVSEA
- NAVAIR
- NCCA

Other Organizations
- I&L (TLCM)
- Expeditionary Energy Office
- LOGCOM
- CD&I
- MORS
- SCEA
- SOLE

Hands-On Training

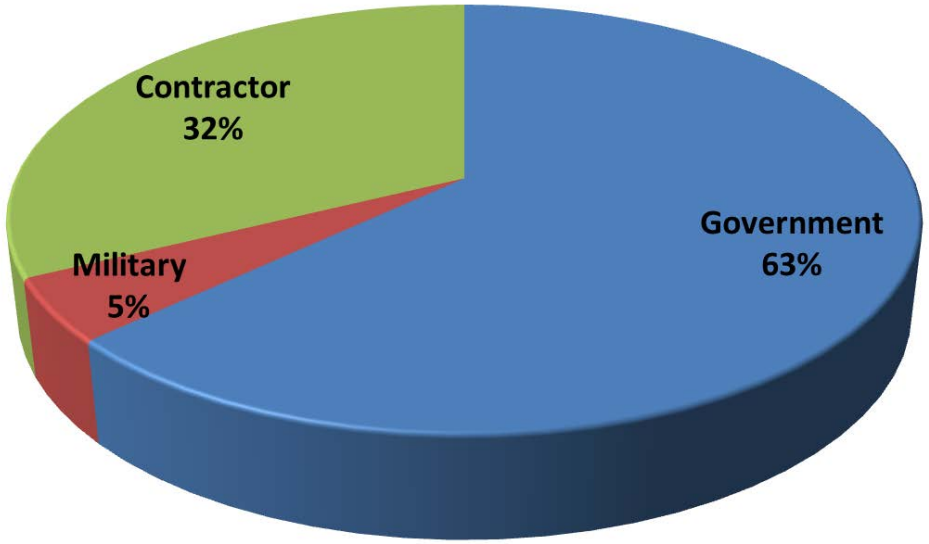
Provide users with experience to utilize the USMC LRFS CET in MCSC for current and future programs.

Objectives:
- Generate and LRFS with the USMC LRFS CET
- Perform basic navigation throughout the tool
- Use support resources for the USMC LRFS CET
- Perform basic risk analysis of results
- Introduction to concepts of inflation, the AC ALPS Roadmap, Acquisition Logistics

Hands-On Training provided to:
- MRAP (Pilot)
- PEO LS
- PM TRASYS
- PG10
- GCSS
- PG16
- PG11
- PG12
- AC ALPS SME
- PG14
- PG13 (April 2012)
- PG15 (April 2012)

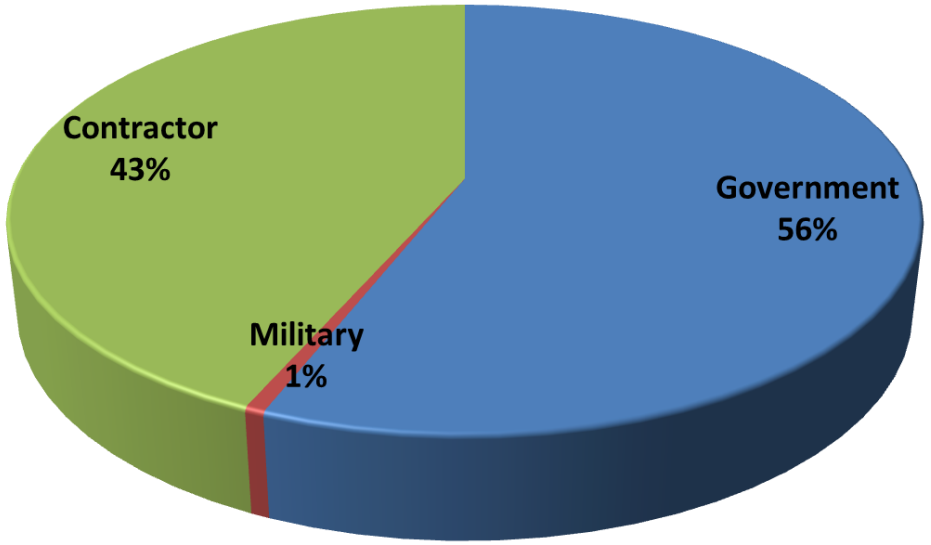
USMC LRFS CET – Demonstration and Training

USMC LRFS CET Users
(Sample Taken March 2012)



Total Users: 489

USMC LRFS CET Training Participants
(Sample Taken March 2012)



Total Training Participants: 166