

# Use of Life Cycle Cost Estimates in OMB-300 Budget Reporting

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Joint ISPA/SCEA National Conference (San Diego, CA)

June 8-11, 2010



# Agenda & Outline

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- OMB-300 Requirements
- Alternate interpretations of “life cycle cost”
- Budgetary vs. Comparative Estimates of LCC
- Conversion from LCC to OMB-300
  - Adjustments for inflation
  - Adjustments for scope
  - Adjustment for format
  - Treatment of labor costs
- Sample conversion using Excel
- Conclusions

# OMB 300 Requirements

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- The requirement to submit an OMB Exhibit 300 derives from OMB Circular A-11, Section 300 (Planning, Budgeting, Acquisition, and Management of Capital Assets)
  - Applies “to all agencies of the Executive Branch of the Government...An Exhibit 300 must be submitted for all *major* investments in accordance with this section.”<sup>1</sup>
- “Major” investments are defined as:
  - Program thresholds / reporting requirements
- When OMB-300 is submitted, when updated
- OMB-300 requires a **life cycle cost estimate**
- LCC section format / requirements

# Sample OMB-300 LCC Section

<b>Table 1: SUMMARY OF SPENDING FOR PROJECT PHASES</b> <b>(REPORTED IN MILLIONS)</b> (Estimates for BY+1 and beyond are for planning purposes only and do not represent budget decisions)									
	PY-1 and earlier	PY 2008	CY 2009	BY 2010	BY+1 2011	BY+2 2012	BY+3 2013	BY+4 and beyond	Total
Planning:									
Acquisition :									
Subtotal Planning & Acquisition:									
Operations & Maintenance:									
<b>TOTAL:</b>									
<b>Government FTE Costs should not be included in the amounts provided above.</b>									
Government FTE Costs									
Number of FTE represented by Costs:									

# Issue: Different Definitions of “Life Cycle Cost”

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- “**Risk adjusted life-cycle costs** means the overall estimated cost for a particular investment alternative over...the life of the investment, including **direct and indirect** initial costs plus any periodic or continuing costs of operation and maintenance that has been adjusted to accommodate any risk identified in the risk management plans.” – OMB Circular A-11 Sec. 300, p. 5
- “**A capital asset’s life cycle**...is [all phases:] concept analysis, technology definition, requirements planning, acquisition, and operations and maintenance...LCCEs encompass all possible costs” – *GAO Cost Estimating and Assessment Guide*, pp. i & 32
- “**Total ownership cost (TOC)**...is defined as **Life Cycle Cost (LCC)**. LCC includes not only acquisition program direct costs, but also the indirect costs attributable to the acquisition program...For example, indirect costs would include the infrastructure that plans, manages, and executes a program over its full life and common support items and systems.” – Gates, James. *Defense Acquisition University (DAU) Teaching Note: Introduction to Cost Analysis* (April, 2006)

# Issue: Different Definitions of “Life Cycle Cost” (continued)

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- However, it the *GAO Cost Guide* does *not* endorse the view of “life cycle cost” as the most comprehensive possible cost, and does *not* regard it as equivalent to total ownership cost (TOC): “[TOC is] related to LCCE but broader in scope...consists of the elements of life cycle cost plus some infrastructure and business process costs not necessarily attributable to the program.” (p. 35)
  - This is relevant because the GAO standards are the ones used to audit the cost estimating practices within agencies and programs
- Moreover, it is customary to for the analyst to set a timeframe for the LCCE in the ground rules and assumptions section (e.g. FOC+10), which may or may not match the “life of the investment”

# Another Complication: When “LCCE” to refer to Level of Detail

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- To make matters more confusing, “LCCE” is sometimes used to connote not comprehensiveness, but *level of detail or fidelity* of the estimate
  - For example, the *GAO Cost Guide* distinguishes between rough order of magnitude (ROM) cost estimates and LCCEs in terms of their level of fidelity
  - Although a ROM estimate “may cover only a portion of the LCCE” (p. 35), it may in fact cover all phases of the life cycle, especially if the ultimate requirement is an OMB 300 submission
  - In these cases, what distinguishes a ROM from an LCCE is the level of detail/fidelity of the estimate, data available, and estimating methods used—*not* scope

# Interpretation of the LCCE Requirement: DoD Example

- Various agencies interpret the LCCE requirement in different ways
- For example, in the DoD 5000 Series, there is no cost product called “Life Cycle Cost Estimate.”
  - However, there is the Program Office Estimate (POE), sometimes called a Program Life Cycle Cost Estimate (PLCCE)

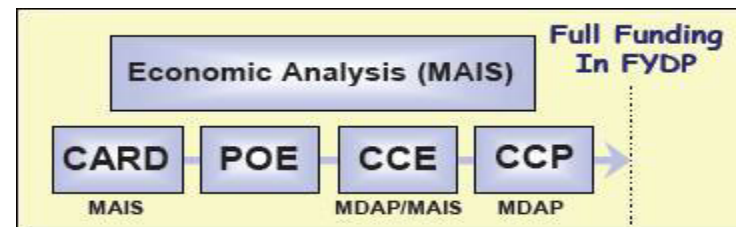


Image Source: Defense Acquisition University (DAU)

- For understandable reasons, PLCCEs tend to include only costs that are *directly* attributable the program
  - After all, PLCCEs support budgeting. Common support items and infrastructure costs are typically not paid directly by the Program. So why would they be in a POE? For example, how many POEs include a share of the cost of maintaining fiber optic lines for agency-wide phone and internet connectivity?

# Alternate Definitions of Life Cycle Cost: Summary

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- Can refer to Total Ownership Cost (including direct costs, indirect costs attributable to the program, and some indirect costs not attributable to the program)
  - Or not, as with a POE/PLCCE
- Can refer to the entire life cycle of the investment
  - Or not, as with the FOC+10 convention
- Can refer to the level of detail/fidelity/quality of the estimate
  - Or not, as with a ROM estimate of life cycle costs
- For purposes of this presentation, **the definition of life cycle cost estimate is contextual**: an estimate of life cycle cost to support one cost product is potentially different than that an estimate to support another. That is why conversions are sometimes necessary, and numbers should *never* simply be copied from one cost product to another.

# Examples of Cost Products Requiring Estimates of Life Cycle Cost

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- Budgetary
  - Detailed: POE/PLCCE, CCE, CCP, OMB 300
  - Non-detailed: ROM
- Comparative
  - AA, AoA, EA, BCA, CBA

These two categories of estimates serve fundamentally different purposes and *cannot* be interchanged with one another. However, they should be linked by their use of a common data set and common technical description (e.g. CARD).

# Characteristics of Budgetary Estimates of Life Cycle Cost

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- Estimated in base year (constant year) dollars
- Escalated using appropriate inflation indices to then-year dollars
- Include only costs attributable to the program
  - “Attributable” is same as “paid for by”
- Timeframe of estimate supports timeframe of budgetary submission
- Costs are time-phased for budgeting, risk-adjusted, and split by appropriation
- No Status Quo Phase Out costs (only one alternative considered); no benefits estimated
- Sunk costs included if they fall within budgetary timeframe
- Ignores time value of money

# Characteristics of Comparative Estimates of Life Cycle Cost

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- Estimated in base year (constant year) dollars
- Discounted using appropriate real discount rate (OMB Circular A-94) to present value dollars (supports ROI/NPV/IRR calculation)
- Include costs attributable to the program; maybe more; maybe less
  - Costs can be “attributable” to the program, even if the program doesn’t pay for them
  - Some costs that are constant across alternatives may be excluded by ground rule
- Timeframe of estimate set by analyst, but must be constant across alternatives
- Costs are time-phased for discounting, may or may not be risk-adjusted, are not split by appropriation
- Phase Out costs, multiple alternatives, benefits potentially included
- Sunk costs excluded
- “Apples to apples” comparison may require *significant* cost adjustments

# Example Conversion from LCC to OMB-300

- Example Base Year 2010 estimate:

CES # FY:	2010	2011	2012	2013	2014	2015	...	2027	TOTAL
<b>1.0 Investment</b>	<b>\$54.5</b>	<b>\$19.5</b>	<b>\$50.1</b>	<b>\$40.4</b>	<b>\$40.3</b>	<b>\$45.2</b>		<b>\$0.0</b>	<b>\$309.7</b>
1.1 Program Management	\$3.5	\$3.5	\$3.5	\$3.5	\$3.5	\$3.5		\$0.0	\$27.9
1.1.1 Government	\$2.9	\$2.9	\$2.9	\$2.9	\$2.9	\$2.9		\$0.0	\$23.1
1.1.2 Contractor	\$0.6	\$0.6	\$0.6	\$0.6	\$0.6	\$0.6		\$0.0	\$4.8
1.2 Concept Exploration	\$0.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$0.0	\$0.5
1.3 System Development	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$0.0	\$0.0
1.4 System Procurement	\$42.7	\$0.0	\$9.9	\$0.1	\$0.0	\$5.7		\$0.0	\$58.5
1.5 Infrastructure Investment	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$0.0	\$0.0
1.6 System Initiation, Implementation, and Fielding	\$7.8	\$16.0	\$36.6	\$36.8	\$36.8	\$36.0		\$0.0	\$222.8
<b>2.0 Operations &amp; Support</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$10.6</b>	<b>\$11.8</b>	<b>\$20.1</b>	<b>\$21.4</b>		<b>\$23.9</b>	<b>\$340.9</b>
2.1 System Management	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$3.5	\$34.9
2.2 Annual Operations Investment	\$0.0	\$0.0	\$1.2	\$2.4	\$3.7	\$4.9		\$7.3	\$98.8
2.3 Hardware Maintenance	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$0.0	\$0.0
2.4 Software Maintenance	\$0.0	\$0.0	\$9.4	\$9.4	\$11.6	\$11.6		\$12.9	\$195.0
2.5 Support Infrastructure	\$0.0	\$0.0	\$0.0	\$0.0	\$4.9	\$4.9		\$0.2	\$12.2
2.5.1 Data Center Operating Support	\$0.0	\$0.0	\$0.0	\$0.0	\$4.7	\$4.7		\$0.0	\$9.4
2.5.2 Data Maintenance	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	\$0.2		\$0.2	\$2.8
<b>3.0 Parallel Legacy System Operation</b>	<b>\$14.6</b>	<b>\$14.6</b>	<b>\$12.5</b>	<b>\$10.4</b>	<b>\$8.4</b>	<b>\$6.3</b>		<b>\$0.0</b>	<b>\$73.1</b>
<b>Total Cost (FY 2010\$M)</b>	<b>\$69.1</b>	<b>\$34.1</b>	<b>\$73.2</b>	<b>\$62.7</b>	<b>\$68.8</b>	<b>\$72.9</b>		<b>\$23.9</b>	<b>\$723.7</b>

# Conversion from LCC to OMB-300

- Adjustments for inflation – example estimate in then-year

	A	B	C	D
1		2010	2011	2012
2	Cost Element 1.1	...	=BaseYearEstimate!C2*VLOOKUP(C\$1,Inflation,7,0)/VLOOKUP(2010,Inflation,6,0)	...

CES #	FY:	2010	2011	2012	2013	2014	2015	...	2027	TOTAL
<b>1.0</b>	<b>Investment</b>	<b>\$55.6</b>	<b>\$20.2</b>	<b>\$52.8</b>	<b>\$43.5</b>	<b>\$44.1</b>	<b>\$50.4</b>		<b>\$0.0</b>	<b>\$334.8</b>
1.1	Program Management	\$3.6	\$3.6	\$3.7	\$3.8	\$3.8	\$3.9		\$0.0	\$30.3
1.1.1	Government	\$2.9	\$3.0	\$3.0	\$3.1	\$3.2	\$3.2		\$0.0	\$25.1
1.1.2	Contractor	\$0.6	\$0.6	\$0.6	\$0.7	\$0.7	\$0.7		\$0.0	\$5.3
1.2	Concept Exploration	\$0.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$0.0	\$0.5
1.3	System Development	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$0.0	\$0.0
1.4	System Procurement	\$43.6	\$0.0	\$10.5	\$0.1	\$0.0	\$6.4		\$0.0	\$60.5
1.5	Infrastructure Investment	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$0.0	\$0.0
1.6	System Initiation, Implementation, and Fielding	\$8.0	\$16.6	\$38.7	\$39.6	\$40.3	\$40.1		\$0.0	\$243.5
<b>2.0</b>	<b>Operations &amp; Support</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$11.2</b>	<b>\$12.7</b>	<b>\$22.0</b>	<b>\$23.8</b>		<b>\$23.9</b>	<b>\$408.8</b>
2.1	System Management	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$3.5	\$43.2
2.1.1	Government	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$2.9	\$35.7
2.1.2	Contractor	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$0.6	\$7.5
2.2	Annual Operations Investment	\$0.0	\$0.0	\$1.3	\$2.6	\$4.0	\$5.4		\$7.3	\$119.2
2.3	Hardware Maintenance	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$0.0	\$0.0
2.4	Software Maintenance	\$0.0	\$0.0	\$9.9	\$10.1	\$12.7	\$12.9		\$12.9	\$232.7
2.5	Support Infrastructure	\$0.0	\$0.0	\$0.0	\$0.0	\$5.4	\$5.5		\$0.2	\$13.7
2.5.1	Data Center Operating Support	\$0.0	\$0.0	\$0.0	\$0.0	\$5.1	\$5.2		\$0.0	\$10.4
2.5.2	Data Maintenance	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	\$0.2		\$0.2	\$3.4
<b>3.0</b>	<b>Parallel Legacy System Operation</b>	<b>\$14.9</b>	<b>\$15.2</b>	<b>\$13.2</b>	<b>\$11.2</b>	<b>\$9.1</b>	<b>\$7.0</b>		<b>\$0.0</b>	<b>\$77.8</b>
	<b>Total Cost (TY\$M)</b>	<b>\$70.5</b>	<b>\$35.4</b>	<b>\$77.3</b>	<b>\$67.4</b>	<b>\$75.3</b>	<b>\$81.2</b>		<b>\$23.9</b>	<b>\$821.4</b>

- Bottom line increase of \$97.7M

# Conversion from LCC to OMB-300

- Adjustments for scope. LCC elements outside of program scope
  - Phase out of status quo
  - Infrastructure costs such as facilities, data hosting, communications

CES #	FY:	2010	2011	2012	2013	2014	2015	...	2027	TOTAL
<b>1.0</b>	<b>Investment</b>	<b>\$55.6</b>	<b>\$20.2</b>	<b>\$52.8</b>	<b>\$43.5</b>	<b>\$44.1</b>	<b>\$50.4</b>		<b>\$0.0</b>	<b>\$334.8</b>
1.1	Program Management	\$3.6	\$3.6	\$3.7	\$3.8	\$3.8	\$3.9		\$0.0	\$30.3
1.1.1	Government	\$2.9	\$3.0	\$3.0	\$3.1	\$3.2	\$3.2		\$0.0	\$25.1
1.1.2	Contractor	\$0.6	\$0.6	\$0.6	\$0.7	\$0.7	\$0.7		\$0.0	\$5.3
1.2	Concept Exploration	\$0.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$0.0	\$0.5
1.3	System Development	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$0.0	\$0.0
1.4	System Procurement	\$43.6	\$0.0	\$10.5	\$0.1	\$0.0	\$6.4		\$0.0	\$60.5
1.5	Infrastructure Investment	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$0.0	\$0.0
1.6	System Initiation, Implementation, and Fielding	\$8.0	\$16.6	\$38.7	\$39.6	\$40.3	\$40.1		\$0.0	\$243.5
<b>2.0</b>	<b>Operations &amp; Support</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$11.2</b>	<b>\$12.7</b>	<b>\$16.7</b>	<b>\$18.4</b>		<b>\$23.7</b>	<b>\$395.1</b>
2.1	System Management	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$3.5	\$43.2
2.1.1	Government	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$2.9	\$35.7
2.1.2	Contractor	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$0.6	\$7.5
2.2	Annual Operations Investment	\$0.0	\$0.0	\$1.3	\$2.6	\$4.0	\$5.4		\$7.3	\$119.2
2.3	Hardware Maintenance	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$0.0	\$0.0
2.4	Software Maintenance	\$0.0	\$0.0	\$9.9	\$10.1	\$12.7	\$12.9		\$12.9	\$232.7
2.5	Support Infrastructure	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$0.0	\$0.0
2.5.1	Data Center Operating Support	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$0.0	\$0.0
2.5.2	Data Maintenance	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$0.0	\$0.0
<b>3.0</b>	<b>Parallel Legacy System Operation</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>		<b>\$0.0</b>	<b>\$0.0</b>
<b>Total Cost (TY\$M)</b>		<b>\$55.6</b>	<b>\$20.2</b>	<b>\$64.0</b>	<b>\$56.2</b>	<b>\$60.8</b>	<b>\$68.7</b>		<b>\$23.7</b>	<b>\$729.9</b>

- Bottom line decrease of \$91.5M

# Conversion from LCC to OMB-300

- Adjustments for performance, e.g. bringing Alternative A up to same level of tech support as Alternative B.
  - Assume the comparative analysis includes cost for system uptime of 98%, which was an assumption common to all alternatives.
  - Execution of the program, and the budget, are based on a 99.9% uptime assumption. It is estimated that this increases costs by \$1.5M per year.

CES #	FY:	2010	2011	2012	2013	2014	2015	...	2027	TOTAL
<b>1.0</b>	<b>Investment</b>	<b>\$55.6</b>	<b>\$20.2</b>	<b>\$52.8</b>	<b>\$43.5</b>	<b>\$44.1</b>	<b>\$50.4</b>		<b>\$0.0</b>	<b>\$334.8</b>
1.1	Program Management	\$3.6	\$3.6	\$3.7	\$3.8	\$3.8	\$3.9		\$0.0	\$30.3
1.1.1	Government	\$2.9	\$3.0	\$3.0	\$3.1	\$3.2	\$3.2		\$0.0	\$25.1
1.1.2	Contractor	\$0.6	\$0.6	\$0.6	\$0.7	\$0.7	\$0.7		\$0.0	\$5.3
1.2	Concept Exploration	\$0.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$0.0	\$0.5
1.3	System Development	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$0.0	\$0.0
1.4	System Procurement	\$43.6	\$0.0	\$10.5	\$0.1	\$0.0	\$6.4		\$0.0	\$60.5
1.5	Infrastructure Investment	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$0.0	\$0.0
1.6	System Initiation, Implementation, and Fielding	\$8.0	\$16.6	\$38.7	\$39.6	\$40.3	\$40.1		\$0.0	\$243.5
<b>2.0</b>	<b>Operations &amp; Support</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$12.7</b>	<b>\$14.2</b>	<b>\$18.2</b>	<b>\$19.9</b>		<b>\$25.6</b>	<b>\$422.6</b>
2.1	System Management	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$3.5	\$43.2
2.1.1	Government	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$2.9	\$35.7
2.1.2	Contractor	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$0.6	\$7.5
2.2	Annual Operations Investment	\$0.0	\$0.0	\$1.3	\$2.6	\$4.0	\$5.4		\$7.3	\$119.2
2.3	Hardware Maintenance	\$0.0	\$0.0	\$1.5	\$1.5	\$1.6	\$1.6		\$2.0	\$27.5
2.4	Software Maintenance	\$0.0	\$0.0	\$9.9	\$10.1	\$12.7	\$12.9		\$12.9	\$232.7
2.5	Support Infrastructure	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$0.0	\$0.0
<b>3.0</b>	<b>Parallel Legacy System Operation</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>		<b>\$0.0</b>	<b>\$0.0</b>
	<b>Total Cost (TY\$M)</b>	<b>\$55.6</b>	<b>\$20.2</b>	<b>\$65.5</b>	<b>\$57.7</b>	<b>\$62.4</b>	<b>\$70.3</b>		<b>\$25.6</b>	<b>\$757.4</b>

# Conversion from LCC to OMB-300

- Adjustments for time frame
  - OMB-300 asks for sunk costs from prior years
  - First and last columns of the OMB-300 format may include more than one year

CES # FY:	2007 and earlier	2008	2009	2010	2011	2012	2013	2014 and beyond	TOTAL
<b>1.0 Investment</b>	<b>\$0.0</b>	<b>\$1.5</b>	<b>\$4.1</b>	<b>\$55.6</b>	<b>\$20.2</b>	<b>\$52.8</b>	<b>\$43.5</b>	<b>\$162.7</b>	<b>\$340.4</b>
1.1 Program Management		\$1.5	\$3.6	\$3.6	\$3.6	\$3.7	\$3.8	\$15.7	\$35.4
1.1.1 Government		\$1.5	\$2.9	\$2.9	\$3.0	\$3.0	\$3.1	\$13.0	\$29.5
1.1.2 Contractor			\$0.6	\$0.6	\$0.6	\$0.6	\$0.7	\$2.7	\$5.9
1.2 Concept Exploration			\$0.5	\$0.5	\$0.0	\$0.0	\$0.0	\$0.0	\$1.0
1.3 System Development				\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
1.4 System Procurement				\$43.6	\$0.0	\$10.5	\$0.1	\$6.4	\$60.5
1.5 Infrastructure Investment				\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
1.6 System Initiation, Implementation, and Fielding				\$8.0	\$16.6	\$38.7	\$39.6	\$140.6	\$243.5
<b>2.0 Operations &amp; Support</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$12.7</b>	<b>\$14.2</b>	<b>\$395.7</b>	<b>\$422.6</b>
2.1 System Management				\$0.0	\$0.0	\$0.0	\$0.0	\$43.2	\$43.2
2.1.1 Government				\$0.0	\$0.0	\$0.0	\$0.0	\$35.7	\$35.7
2.1.2 Contractor				\$0.0	\$0.0	\$0.0	\$0.0	\$7.5	\$7.5
2.2 Annual Operations Investment				\$0.0	\$0.0	\$1.3	\$2.6	\$115.3	\$119.2
2.3 Hardware Maintenance				\$0.0	\$0.0	\$1.5	\$1.5	\$24.5	\$27.5
2.4 Software Maintenance				\$0.0	\$0.0	\$9.9	\$10.1	\$212.7	\$232.7
<b>Total Cost (TY\$M)</b>	<b>\$0.0</b>	<b>\$1.5</b>	<b>\$4.1</b>	<b>\$55.6</b>	<b>\$20.2</b>	<b>\$65.5</b>	<b>\$57.7</b>	<b>\$558.4</b>	<b>\$763.0</b>

- Bottom line increase of \$5.5M (from sunk costs)

# Conversion from LCC to OMB-300

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- Treatment of labor costs
  - Separation of government versus contractor. Only government labor is included in the OMB-300 “Government FTE Costs” row.
  - DoD policy: DTM 09-007, “Estimating and Comparing the Full Costs of Civilian and Military Manpower and Contract Support”, January 29, 2010
  - DoD composite labor rates: <http://comptroller.defense.gov/rates/>

# Conversion from LCC to OMB-300

- Treatment of labor costs

CES #	FY:	2007 and earlier	2008	2009	2010	2011	2012	2013	2014 and beyond	TOTAL
<b>1.0</b>	<b>Investment</b>	<b>\$0.0</b>	<b>\$1.5</b>	<b>\$4.1</b>	<b>\$55.6</b>	<b>\$20.2</b>	<b>\$52.8</b>	<b>\$43.5</b>	<b>\$162.7</b>	<b>\$340.4</b>
1.1	Program Management		\$1.5	\$3.6	\$3.6	\$3.6	\$3.7	\$3.8	\$15.7	\$35.4
1.1.1	Government		\$1.5	\$2.9	\$2.9	\$3.0	\$3.0	\$3.1	\$13.0	\$29.5
1.1.2	Contractor			\$0.6	\$0.6	\$0.6	\$0.6	\$0.7	\$2.7	\$5.9
1.2	Concept Exploration			\$0.5	\$0.5	\$0.0	\$0.0	\$0.0	\$0.0	\$1.0
1.3	System Development				\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
1.4	System Procurement				\$43.6	\$0.0	\$10.5	\$0.1	\$6.4	\$60.5
1.5	Infrastructure Investment				\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
1.6	System Initiation, Implementation, and Fielding				\$8.0	\$16.6	\$38.7	\$39.6	\$140.6	\$243.5
<b>2.0</b>	<b>Operations &amp; Support</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$12.7</b>	<b>\$14.2</b>	<b>\$395.7</b>	<b>\$422.6</b>
2.1	System Management				\$0.0	\$0.0	\$0.0	\$0.0	\$43.2	\$43.2
2.1.1	Government				\$0.0	\$0.0	\$0.0	\$0.0	\$35.7	\$35.7
2.1.2	Contractor				\$0.0	\$0.0	\$0.0	\$0.0	\$7.5	\$7.5
2.2	Annual Operations Investment				\$0.0	\$0.0	\$1.3	\$2.6	\$115.3	\$119.2
2.3	Hardware Maintenance				\$0.0	\$0.0	\$1.5	\$1.5	\$24.5	\$27.5
2.4	Software Maintenance				\$0.0	\$0.0	\$9.9	\$10.1	\$212.7	\$232.7
	<b>Total Cost (TY\$M)</b>	<b>\$0.0</b>	<b>\$1.5</b>	<b>\$4.1</b>	<b>\$55.6</b>	<b>\$20.2</b>	<b>\$65.5</b>	<b>\$57.7</b>	<b>\$558.4</b>	<b>\$763.0</b>

- Government labor is included in OMB-300, but separated and reported below the Total line. In this example, \$65.2M is moved.

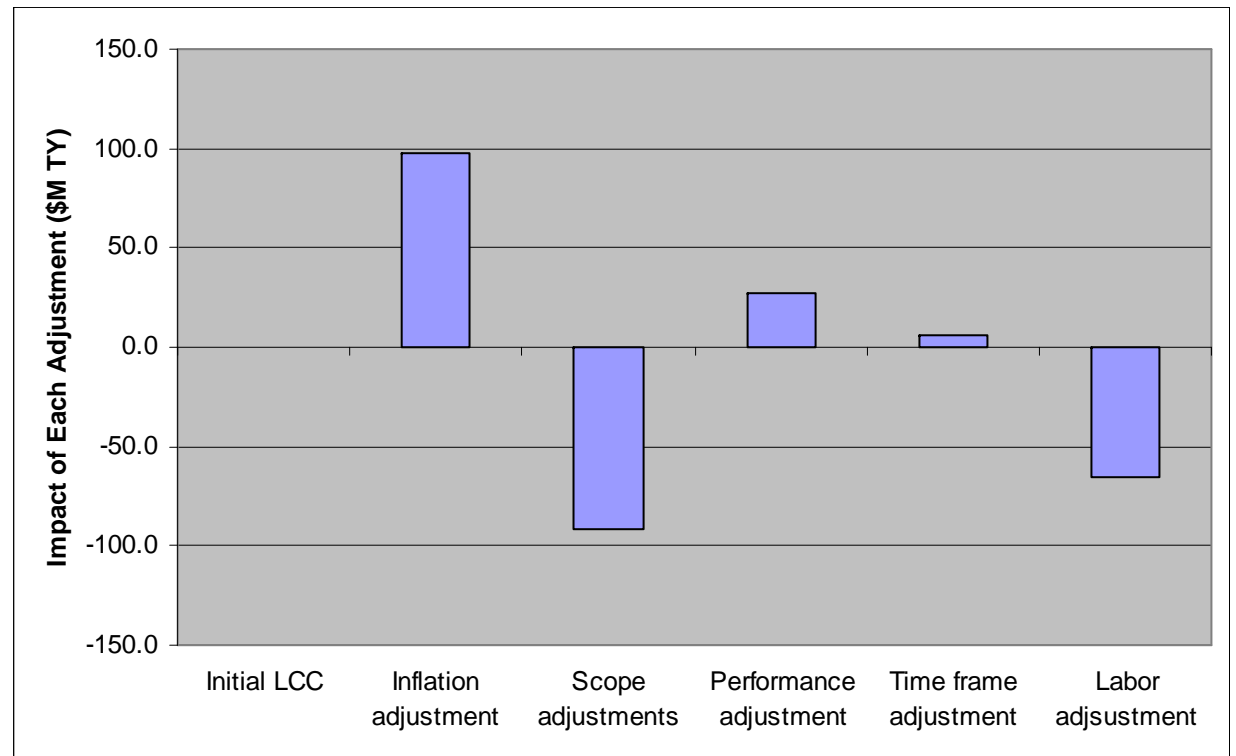
# Conversion from LCC to OMB-300

- Mapping of LCC CES to OMB-300:
  - **Planning:** calculated from cost element 1.2 (concept exploration).
  - **Acquisition:** cost element 1.0 (investment) minus government FTE cost, minus planning.
  - **Operations and Maintenance:** cost element 2.0 (operations & support) minus government FTE costs.
  - **Government FTE Costs:** subtracted from the other cost elements and shown separately.
  - **Government FTE:** uses an average grade / step and applies the DoD composite rate for military and loaded GS pay schedule for civilian
- Final OMB-300 Format

	PY-1 and earlier	PY 2008	CY 2009	BY 2010	BY+1 2011	BY+2 2012	BY+3 2013	BY+4 and beyond	Total
Planning:	\$0.0	\$0.0	\$0.5	\$0.5	\$0.0	\$0.0	\$0.0	\$0.0	\$1.0
Acquisition:	\$0.0	\$0.0	\$0.6	\$52.2	\$17.2	\$49.8	\$40.4	\$149.7	\$309.9
<b>Subtotal Planning &amp; Acquisition:</b>	\$0.0	\$0.0	\$1.1	\$52.7	\$17.2	\$49.8	\$40.4	\$149.7	\$310.9
Operations & Maintenance:	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$12.7	\$14.2	\$360.0	\$386.9
<b>TOTAL:</b>	\$0.0	\$0.0	\$1.1	\$52.7	\$17.2	\$62.5	\$54.6	\$509.7	\$697.8
Government FTE Costs:	\$0.0	\$1.5	\$2.9	\$2.9	\$3.0	\$3.0	\$3.1	\$48.7	\$65.2
Number of FTE represented by Costs:	0	0	0	21.4	22.0	22.7	23.4	313.0	402.5

# Conversion from LCC to OMB-300

- LCC total started at \$723.7M
- Impact of each adjustment on life cycle total:
  - Inflation: \$97.7M
  - Scope: -\$91.5M
  - Performance: \$27.5M
  - Time frame: \$5.5M
  - Separation of government labor: -\$65.2M
- OMB-300 LCC Total is reported as \$697.8M



- Overall impact is masked by the fact that conversions offset each other.
- **The total value of all conversions in absolute dollars is \$287.4M !**

# Conclusions

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- **“Life Cycle Cost Estimate” means different things to different people.** Understanding the term requires understanding the intended purpose of the cost product in which the LCCE requirement exists
- There are many types of estimates of life cycle cost, but they can be broadly grouped as **Budgetary** or **Comparative**
- **Virtually any estimate of life cycle cost requires adjustments** before it can be used as an OMB-300 submission
- Failing to perform these adjustments, especially to results from a Comparative analysis, can have **severe and potentially embarrassing consequences**

# References

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- *GAO Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs* (GAO: Washington, DC (2009))
- Gates, James. *Introduction to Cost Analysis*. Defense Acquisition University (DAU) Teaching Note (2006)
- OMB Circulars A-11 and A-94
- DTM 09-007, “Estimating and Comparing the Full Costs of Civilian and Military Manpower and Contract Support”, January 29, 2010 (<http://www.dtic.mil/whs/directives/corres/pdf/DTM-09-007.pdf>)