



Federal Agency IGCE Starter Kit

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Prepared for:
**ICEAA's 2016 Professional Development &
Training Workshop**

June 7-10, 2016 Atlanta, GA

FEDERAL AGENCY IGCE STARTER KIT

Agenda

§ Introduction & Background

§ Overview: Source Selection

§ Role of Cost Analyst in Source Selection

- Independent Government Cost Estimate (IGCE)
- Critical Evaluation

§ Deep Dive: The Customizable IGCE Process

§ Conclusion

INTRODUCTION & BACKGROUND

Abstract

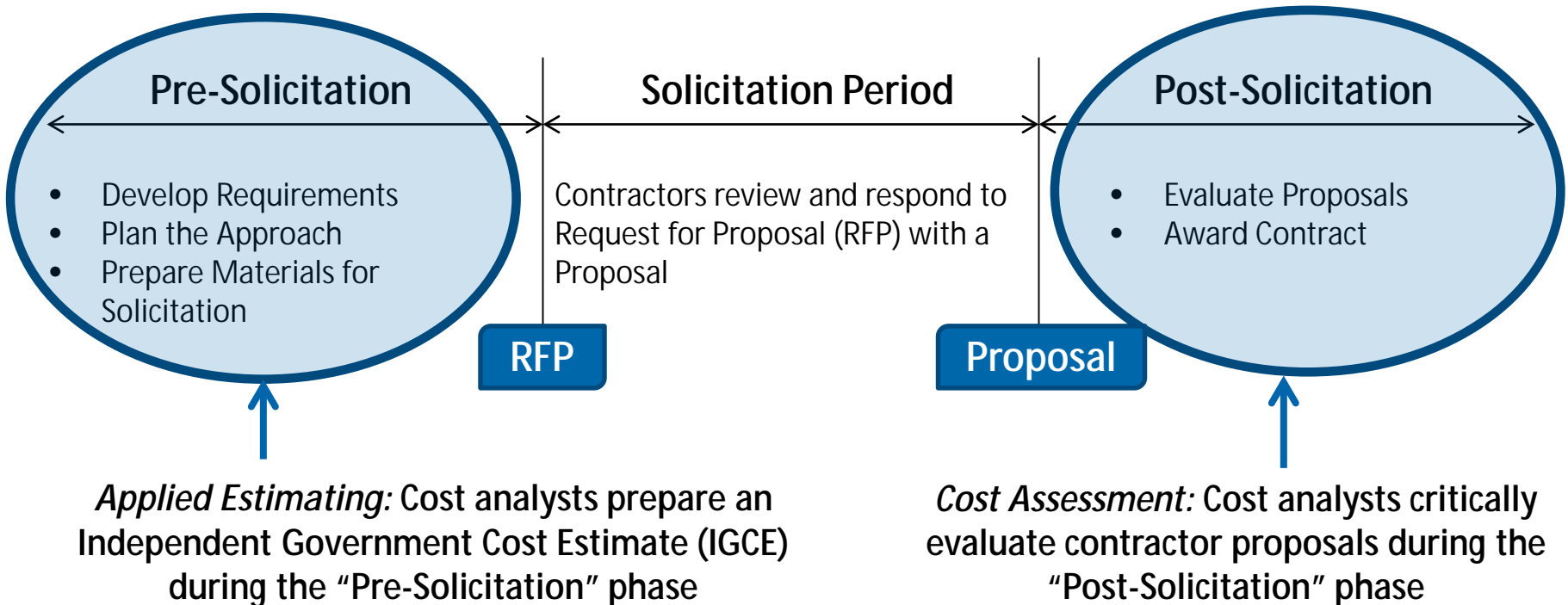
- § To achieve mission success in today's constrained fiscal environment, federal agencies must establish a **fair and reasonable cost baseline** to make informed decisions
- § This baseline is commonly called an Independent Government Cost Estimate (IGCE)
- § We have developed a customizable process that forms a starter kit for any agency that wishes to quickly and effectively perform IGCEs
- § We discuss best practices, lessons learned, and implementation tips for both DoD and civilian agencies

OVERVIEW: SOURCE SELECTION

Source Selection Process & Role of the Cost Analyst

§ Source Selection refers to the process of evaluating a bid or proposal to enter into a government procurement contract with a *source*, or vendor¹

§ Cost analysts play an important role in the source selection process, particularly during the *Pre-Solicitation* and *Post-Solicitation* phases:



1. Adapted from DAU Acquipedia, at <https://dap.dau.mil/acquipedia/Pages/ArticleDetails.aspx?aid=cfee213e-8fc8-441b-9cba-313bc5c97750>

ROLE OF COST ANALYST IN SOURCE SELECTION: IGCE

What is an Independent Government Cost Estimate (IGCE)?

§ An IGCE is the government's unbiased estimate of the resources a contractor will incur in the performance of a contract

- IGCEs can also be developed during contract execution in response to service requests. These requests assist in proper allocation of money for additional tasks

§ Purposes of an IGCE include:

- Establish a "fair and reasonable" (as the Federal Acquisition Regulation (FAR) defines that term¹) cost or price for the goods/services being procured
- Establish an **independent** baseline against which to compare cost or price proposals
- Serve as a tool for the government to aid in price negotiations with vendors
- Ultimately, IGCEs help inform project/program budgets

§ IGCE is required for each procurement action over the simplified acquisition threshold of \$150,000 (FAR simplified acquisition threshold)²

- IGCEs may be requested when this threshold is not met
- A threshold may not apply outside of the context of acquisition

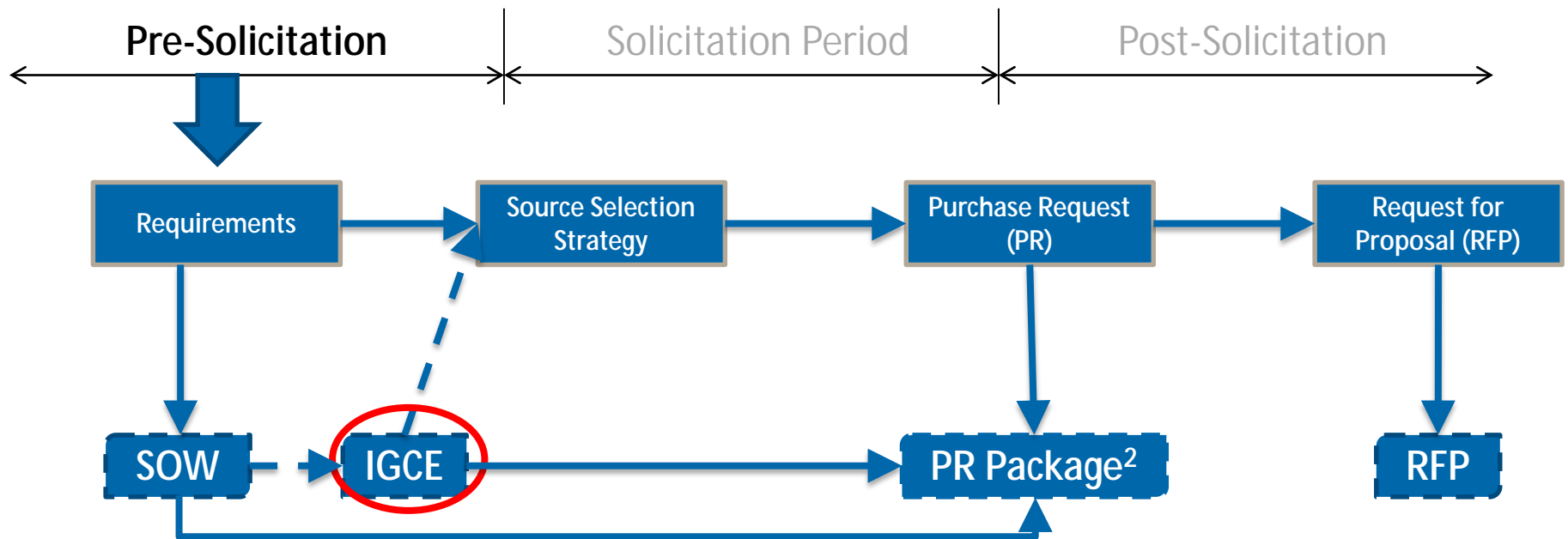
1. See, for example, Federal Acquisition Regulation (FAR) Section 16.202

2. This amount was \$100,000 until 1 October, 2010. Federal Acquisition Regulation Council

ROLE OF COST ANALYST IN SOURCE SELECTION: IGCE

Role of the IGCE in the Pre-Solicitation Phase: "Formal" View

- § IGCE *cannot begin* until the baseline contract requirements¹ are defined, as they are essential to understanding "what we are costing"
- § Source Selection Strategy step *can proceed* if the IGCE establishes that the requirements are affordable



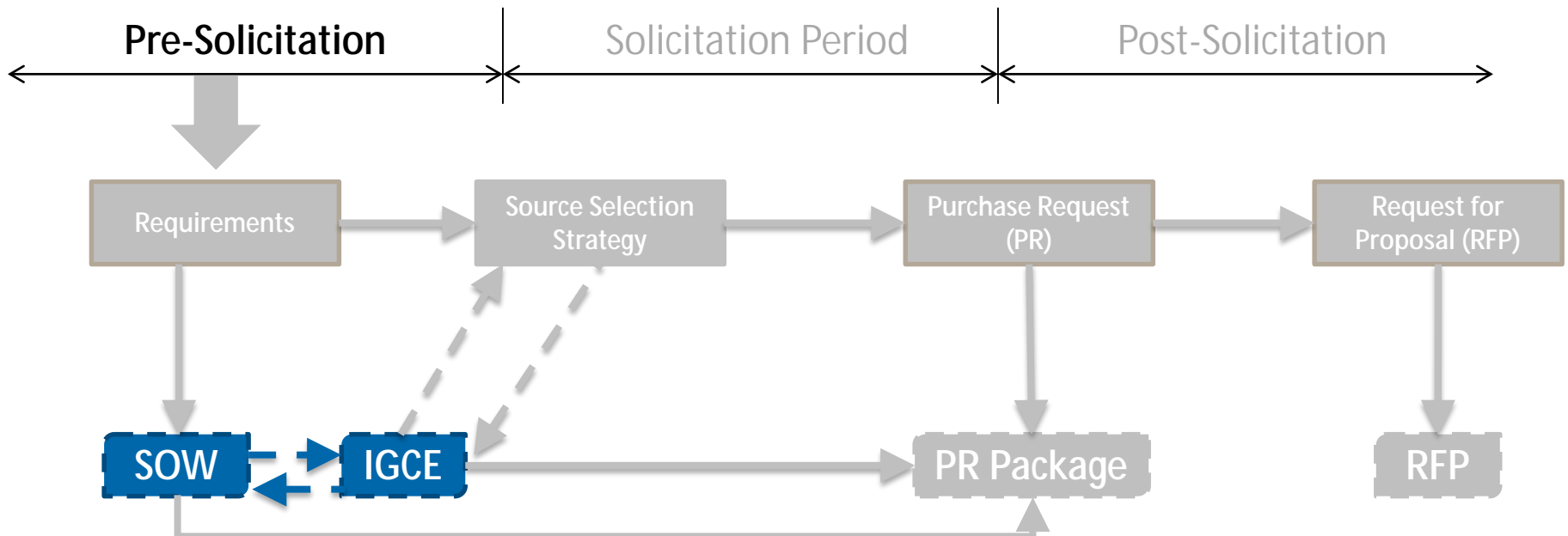
1. Baseline requirements are outlined in the Statement of Work (SOW), Statement of Objectives (SOO), or Performance Work Statement (PWS). These requirements documents are akin to the Cost Analysis Requirements Description (CARD) for a Life-Cycle Cost Estimate (LCCE).
2. Both the SOW/SOO/PWS and IGCE are part of the PR Package.

ROLE OF COST ANALYST IN SOURCE SELECTION: IGCE

Role of the IGCE in the Pre-Solicitation Phase: "Real Life View" (1)

§ *In practice*, work on the IGCE often drives the development of the SOW

- Where requirements are very uncertain/not fully defined at first, the exercise of creating a comprehensive cost element structure (CES) for estimating costs can often help structure and guide the development of the SOW
- Even where an initial SOW has been drafted, the creation of the CES may lead to greater insights, and revisions to the SOW which should be based on that same structure

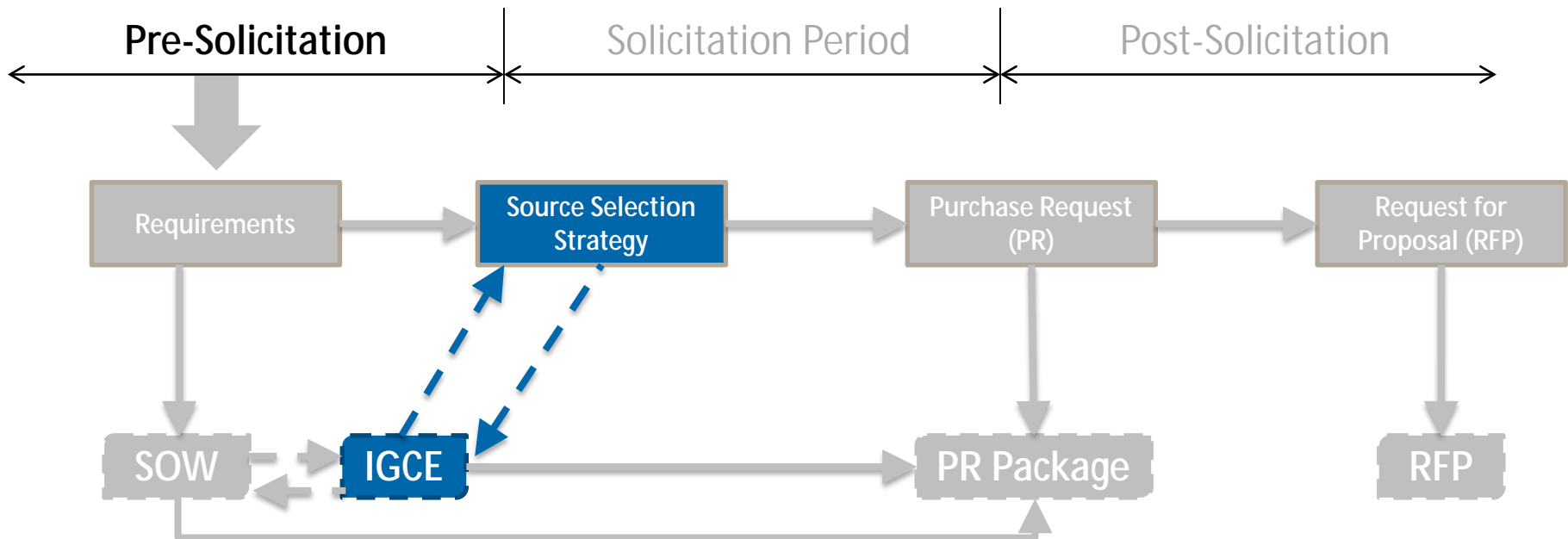


ROLE OF COST ANALYST IN SOURCE SELECTION: IGCE

Role of the IGCE in the Pre-Solicitation Phase: “Real Life View” (2)

§ *In practice*, elements of the Source Selection Strategy are critical to establishing parameters for the IGCE

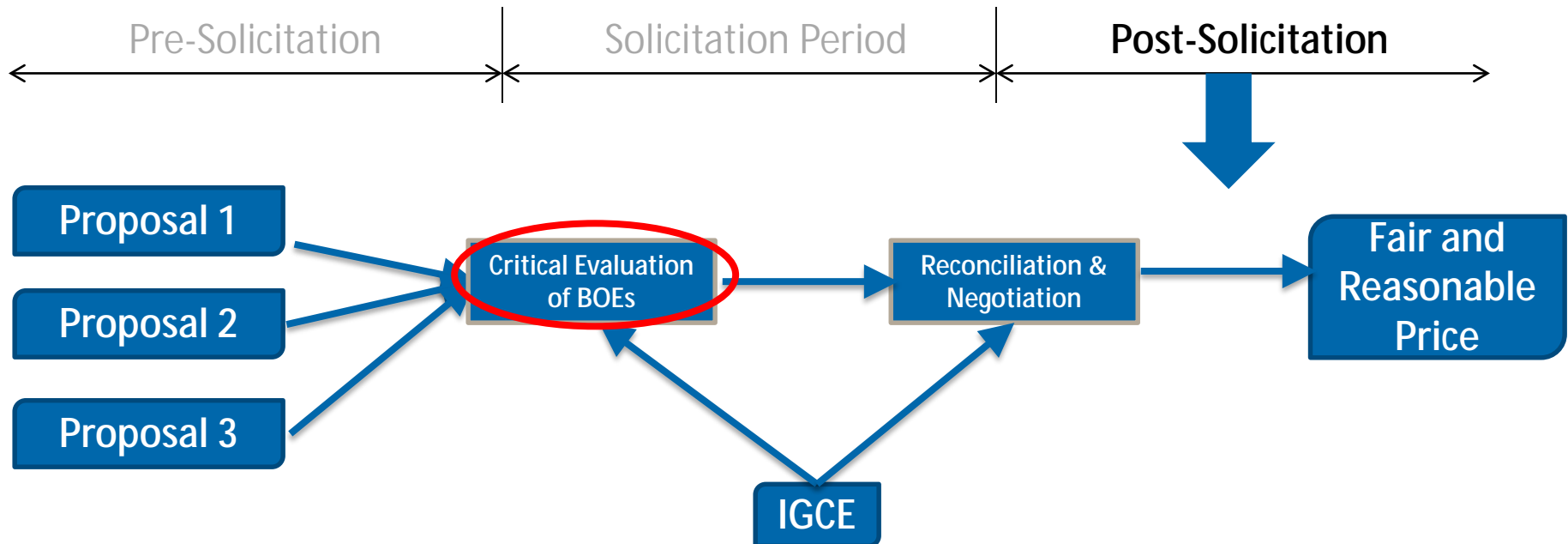
- The contracting approach specified in the strategy impacts the type and number of IGCEs required, as well as the needed inputs (e.g., labor rates)
 - Indefinite Delivery/Indefinite Quantity (IDIQ) contract calls for an estimate of a reasonable “ceiling” price, where separate Task Order-level IGCEs are required for each Task Order issued under the IDIQ
 - Fixed price and cost-reimbursable contracts have differing estimating implications



ROLE OF COST ANALYST IN SOURCE SELECTION: CRITICAL EVALUATION

Role of Critical Evaluation in the Post-Solicitation Phase

- § During the Post-Solicitation Phase, the IGCE serves as an independent baseline against which to critically evaluate cost proposals and BOEs from contractors
- § This critical evaluation is necessary in order to conduct price negotiations with contractors and ensure a fair and reasonable price



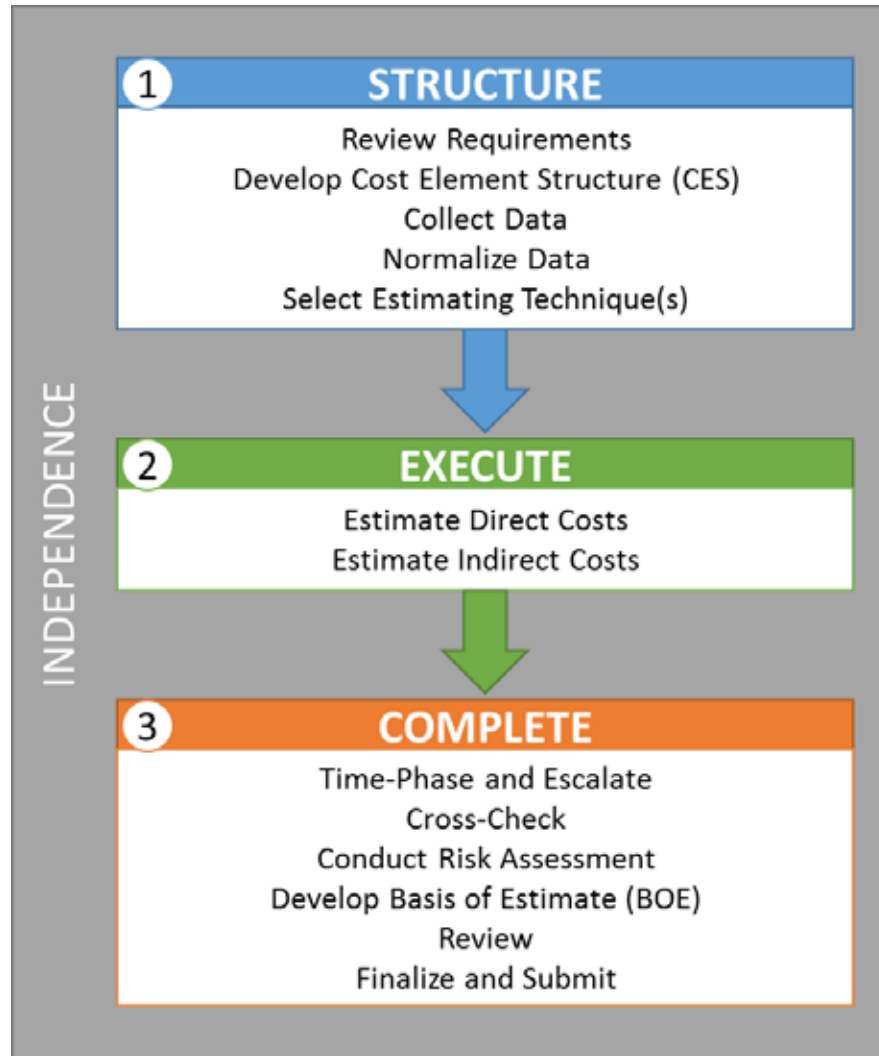
ROLE OF COST ANALYST IN SOURCE SELECTION: CRITICAL EVALUATION

What is Critical Evaluation?

- § In Source Selection, the Critical Evaluation is an evaluation of the contractor's Basis of Estimate (BOE) that is submitted along with their proposal
- § The exact process, and thus the cost analyst's involvement, varies by agency
- § This evaluation includes two main components critical to the source selection process and supporting the development of a fair and reasonable price:
 - Quality Evaluation – cost analyst evaluates the BOE against standard cost estimating best practices in order to ensure the contractor's cost proposal is transparent, accurate, and consistent
 - Comparative Analysis – cost analyst compares the contractor's cost proposal and BOE against the IGCE to determine reasonableness
 - This step may require additional analysis and reevaluation of **assumptions** to facilitate an "apples-to-apples" comparison
 - Cost analyst will not update the numbers to match vendor proposal!

DEEP DIVE: THE CUSTOMIZABLE IGCE PROCESS

The Customizable IGCE Process



ü *Independence is key!*

§ The IGCE process consists of three overarching topics

1. Structure
2. Execute
3. Complete

§ The details of these topics can be customized to meet a federal agency's particular needs

§ The next section highlights each process and provides **tips & tricks** based on our lessons learned, focusing on areas where customization and special considerations are needed

STRUCTURE	
1	Review Requirements
	Develop Cost Element Structure (CES)
	Collect Data
	Normalize Data
	Select Estimating Technique(s)

DEEP DIVE: THE CUSTOMIZABLE IGCE PROCESS

Topic 1: Structure (1 of 2)

§ The first process relates to structuring the estimate

§ Cost analyst must review and understand the purpose and requirements of the project/program (including legacy, analogous, etc. projects/programs)

ü *Beware of the level of detail presented in the requirements document*

- A Statement of Objectives (SOO) tends to be higher-level than a SOW, a fact that has direct estimating implications (in general, less detail means more assumptions)

ü *Ask questions if you don't understand something, but always maintain independence*

- Cost analyst can consult government experts but should not contact the vendors!

§ CES should breakout the SOW into its “costable” parts

ü *Be cognizant of varying interpretations of the same cost element*

- For example, labor costs can be thought of as inclusive or exclusive of burdens

ü *Be sure to understand the intended contract type(s)*

- One would approach an estimate for a fixed price contract differently than a time and materials (T&M) contract

1	STRUCTURE
	Review Requirements
	Develop Cost Element Structure (CES)
	Collect Data
	Normalize Data
	Select Estimating Technique(s)

DEEP DIVE: THE CUSTOMIZABLE IGCE PROCESS

Topic 1: Structure (2 of 2)

§ Market research is the cornerstone of IGCEs; other data sources include invoices and industry standards

ü *Know that non-Department of Defense (DoD) agencies do not have as mature data collection processes in place, meaning less data is readily available; understand that the data found is generally not compiled with a cost analyst in mind*

- Data collection will typically involve more open sources for these agencies (e.g., GSA Advantage)

ü *Seek opportunities to improve data collection processes within the agency*

- Collect actual cost data in relational database structure to facilitate future analyses

§ Data must be normalized for consistent application/utilization and to facilitate “apples-to-apples” comparisons

§ Estimating techniques must be selected for each applicable cost element

ü *Be prepared to employ advanced/creative approaches when conducting estimates for less mature cost organizations*

- For example, an Indefinite Delivery Indefinite Quantity contract where the exact requirements are less defined may require a top-down estimating approach that relies largely on analogy and expert opinion techniques, with adjustments made for scope, time, and other characteristics

DEEP DIVE: THE CUSTOMIZABLE IGCE PROCESS

Topic 2: Execute (1 of 3)

- § Next, the execution process commences, where the estimates are conducted
- § Cost analyst must use CES, normalized data, and selected estimating approaches to estimate each direct cost (labor, materials, travel, subcontracts, and other direct costs (ODCs))
- ü *Seek recent information, as it is generally more applicable*
 - Information technology (IT) systems were vastly different 10 years ago
 - ü *Be sure to include all relevant cost elements, despite the overarching approach (e.g., Top-Down vs. Bottom-Up)*
 - A Top-Down approach will often be used when there is limited data available. Even if the data does not allow for estimating at the cost element level, the cost analyst must still consider all relevant cost elements and ensure they are “captured” in the top-level estimate
 - ü *Don't forget to include the additional tier of General and Administrative (G&A) when estimating subcontract costs*
 - G&A pass-through is a cost that can be quite substantial, depending on the amount of subcontractor involvement, and should not be overlooked
 - ü *Be cognizant of overarching rules and regulations*
 - The Joint Travel Regulations (JTR) outline what costs are allowable and thus have cost estimating implications
 - The Federal Acquisition Regulation (FAR) also has cost estimating implications

DEEP DIVE: THE CUSTOMIZABLE IGCE PROCESS

Topic 2: Execute (2 of 3)

§ Next, cost analyst must use CES, normalized data, and selected estimating approaches to estimate each indirect cost (overhead, G&A, and profit/fee)

ü *Be aware that there are oftentimes different overhead “buckets”*

- Labor overhead and materials overhead serve different purposes and have different bases and associated rates

ü *Make sure you have correctly defined the indirect cost base*

- Different organizations define indirect costs in varying manners. The cost analyst must be aware of these differences and properly account for them such that all applicable indirect costs are accounted for exactly once

ü *Be sure to consult industry standards whenever possible*

Indirect Cost	Contract Type	Typical Ranges
Overhead		Typical overhead rate is 15% or higher. ¹
G&A		Typical G&A rate is 12% to 15%. ²
Profit/Fee	Cost-Reimbursable	Maximum fee is 15% for Research and Development (R&D), 10% for Production and Services, and 6% for Architecture/Engineering. ³
	Time and Materials	Typical profit ranges from 10% to 20%.
	Fixed Price	Target profit is generally at least 20%, and 25% (or more) is possible.

1-2. Army Contracting Agency Guide on IGEs, <https://acc.dau.mil/adl/en-US/31479/file/5705/Army%20Contracting%20Agency%20Guide%20on%20IGEs.doc>.

3. FAR 15.404-4.

DEEP DIVE: THE CUSTOMIZABLE IGCE PROCESS

Topic 2: Execute (3 of 3)

§ Next, cost analyst must use CES, normalized data, and selected estimating approaches to estimate each indirect cost (overhead, G&A, and profit/fee) (cont.)

ü *Consider the amount of risk being taken on by the contractor as you are estimating profit/fee*

ü *Be sure not to double-count anything!*

- T&M contracts capture profit (as well as other indirect costs) in the associated labor rates; therefore, to estimate profit separately would constitute double-counting

DEEP DIVE: THE CUSTOMIZABLE IGCE PROCESS

Topic 3: Complete (1 of 4)

3	COMPLETE
	Time-Phase and Escalate
	Cross-Check
	Conduct Risk Assessment
	Develop Basis of Estimate (BOE)
	Review
	Finalize and Submit

§ After all direct and indirect costs have been estimated, the final stage begins, and the cost analyst completes the estimate

§ At this stage in the IGCE, all costs have been estimated in a common base year, and the cost analyst must time-phase and escalate the estimate

ü *Don't forget to conduct funding limit reconciliation as necessary*

- An organization may only be able to budget \$2.5M per year, and this annual ceiling amount must be appropriately accounted for and considered

ü *Beware that not all organizations have preferred inflation indices*

- In these cases, it is advisable to consult the DoD Greenbook or Consumer Price Index (CPI)¹

§ Once the estimate has been time-phased and escalated, the cost analyst must cross-check the estimates by employing an alternate estimating technique for each of the cost elements

ü *Remember that data availability will influence the cross-check methods employed*

- In certain cases, it may not be possible to use an alternate cost estimating technique, but it may be possible to apply a similar technique to a different data set

1. Army Contract Command IGCE Deskbook (2011).

DEEP DIVE: THE CUSTOMIZABLE IGCE PROCESS

Topic 3: Complete (2 of 4)

3

COMPLETE

Time-Phase and Escalate
Cross-Check
Conduct Risk Assessment
Develop Basis of Estimate (BOE)
Review
Finalize and Submit

§ Risk assessment is another important component of the analysis that assesses how the estimate is affected by changes to key inputs and assumptions, thus enabling understanding of uncertainty and mitigation

ü *Recall that cost estimates are never exactly “right” and remember to account for this fact prior to finalizing the estimate*

- Time considerations may necessitate a qualitative risk assessment; however, if feasible, quantitative sensitivity analysis makes the IGCE stronger

ü *Know that certain organizations may require a quantitative sensitivity analysis*

ü *Remember to focus on the inputs and assumptions that are most uncertain*

- In certain cases, inputs and parameters are known to be fixed and/or robust to changes, and analyzing these inputs and parameters further will gain no additional useful insight

ü *Always setup your workbook so that it is flexible and can facilitate a quantitative sensitivity analysis, if time allows and/or requirements dictate*

- Everything should be linked and a change in one cell should flow through to all cells that are affected by the change
- Best practice is to house all inputs in one tab for quick and effective sensitivity analysis

DEEP DIVE: THE CUSTOMIZABLE IGCE PROCESS

Topic 3: Complete (3 of 4)

3	COMPLETE
	Time-Phase and Escalate
	Cross-Check
	Conduct Risk Assessment
	Develop Basis of Estimate (BOE)
	Review
	Finalize and Submit

§ Next, the cost analyst must compile the IGCE documentation, or the basis of estimate (BOE)

ü *Do not forget the vital importance of this step and document everything!*

- BOE should enable understanding and **replicability**, and it is extremely important to reconciliation
- Although this step is listed in the “Complete” phase, the development of the BOE can ensue concurrently with the estimate itself (in fact, many prefer this method)

ü *Recall that the BOE must include each of the following and should be transparent, accurate, and consistent, and the practice of due diligence should be evident¹:*

1. Scope and requirements
2. Ground rules and assumptions (global, element-level, and input-level)
3. Data (including source information)
4. Estimating techniques
5. Results
6. Limitations of the estimate
7. Any other information to properly communicate the estimate

ü *When in doubt, write it down!*

1. Adapted from: Cost Estimating Body of Knowledge (CEBoK) version 1.2 Module 14, *Contract Pricing*.

DEEP DIVE: THE CUSTOMIZABLE IGCE PROCESS

Topic 3: Complete (4 of 4)

3 COMPLETE
Time-Phase and Escalate
Cross-Check
Conduct Risk Assessment
Develop Basis of Estimate (BOE)
Review
Finalize and Submit

- § After the BOE has been compiled, a draft version of the IGCE has been completed, and this draft version should be reviewed by relevant personnel
- ü *Don't forget to maintain independence and adhere to the particular organization's review practices*
 - Certain organizations may require various tiers of review, while others may solely require one person to review the estimate for reasonableness
 - ü *Be aware that the outcome of this step may require returning to earlier steps*
- § After all feedback resulting from the review has been incorporated, the cost analyst finalizes and submits the IGCE
- ü *Always remember that the IGCE and supporting BOE should be comprehensive enough to answer any questions that may arise during the reconciliation process*

CONCLUSION

Benefits of an IGCE

Benefits	Explanation / Example
Facilitates an understanding of the inherent risks and uncertainties to make informed decisions	The government wanted to understand the inherent risks and uncertainties of a particular effort. By conducting a quantitative sensitivity analysis, the government found that a slight increase in assumed annual maintenance costs would significantly increase the overall estimate. This analysis highlighted the identity and impact of vulnerable parameters.
Facilitates a level playing field among potential vendors	Under a fixed price IT services contract ¹ , an agency has been supported by a certain vendor for 10 years. This agency now wants to establish a contracting environment where the government will retain ownership of all supporting equipment at the end of the contract execution, thereby setting the government up to re-compete the contract through a more level playing field for other potential vendors. An IGCE that considers different contracting environments will enable this end and facilitate understanding of the implications.
Sets up an organization to understand the most cost-effective manner by which to procure services/goods	As part of an IGCE, an agency analyzed the results of different procurement scenarios (purchase, lease, and “lease to own”) and determined that for the given equipment, leasing was the most cost-effective option.

1. In fixed price contracts, the contractor retains title to all property acquired by the contractor for use on the contract, whereas through cost-reimbursable contracts, the government acquires title to all property to which the contractor is entitled to reimbursement (FAR Section 45, Subpart 45.4 (Title to Government Property)).

CONCLUSION

Benefits of an IGCE

Benefits	Explanation / Example
Helps to define contract requirements	The government currently has a grant in place for Alternate Energy Research, but the agency wishes to transition Wind Energy Research from this grant and place it on a new contract. While collecting data for the IGCE required as part of the Acquisition Package, the cost analyst identified crucial programs—ones that were generic in nature, such as Administrative programs—not included in the initial scope. In finding these programs, the cost analyst helped to define crucial requirements for Wind Energy Research.
Establishes an accurate ceiling	The initial ceiling for Wind Energy Research was thought to be \$75M. However, after detailed analysis, the cost analyst found that a more realistic ceiling would be \$50M for this program.
Finds cost savings in the program	Even with the addition of new programs to the Wind Energy Research, the estimate highlighted areas of unnecessary and/or sub-optimal spending and found ways to decrease the estimate.

In the end, a tailored IGCE process facilitates improved acquisition decisions and business outcomes.

CONCLUSION

Final Thoughts

§ Main takeaways:

- Be prepared to customize the process to a particular agency (they're all different)
- Independence is key
- Understand the maturity of an organization and adjust approaches accordingly
- Be aware of a particular organization's practices and requirements and adhere to them (while offering improvements as the opportunity arises!)
- Document, document, document

§ Cost analysts play a key role in the Source Selection Process by developing and reconciling vendor proposals with the IGCE

§ IGCEs provide an independent and reasonable estimate that provides a baseline for federal agencies in comparing proposals

§ Cost analysts provide key insight and analysis that shape many federal programs

Questions?

BACKGROUND INFORMATION

Authors

§ Cassandra M. Capots

- Cassandra Capots is a Cost Analyst at ICF International supporting the Department of Housing and Urban Development, co-developing and implementing a standard independent government cost estimate process. She also supports the Air Force Air Mobility Command and Centers for Disease Control and Prevention. During her career, Ms. Capots has supported various other federal agencies by providing applied cost estimating and cost research support as well as training, among other activities.

§ Lauren Nolte

- Lauren Nolte is a Senior Cost Analyst at ICF where she currently leads the development of IGCEs for the Walter Reed Army Institute of Research; she also supports the Air Force Air Mobility Command Enterprise Learning Office and the Defense Acquisition University. Lauren is an ICEAA-Certified Cost Estimator/Analyst and holds a Masters in Public Administration from the Maxwell School of Syracuse University.

§ Lavanya Yeleswarapu

- Lavanya Yeleswarapu is a Cost Analyst with strong experience in program management and cost modeling. Among other activities, she is supporting the creation of independent government cost estimates (IGCEs) and has led large-scale programs in startup organizations. Ms. Yeleswarapu's recent cost analysis experience has been in support of the Army Human Immunodeficiency Virus (HIV) Program Management Office (PMO) at the Walter Reed Army Institute of Research.

BACKGROUND INFORMATION

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