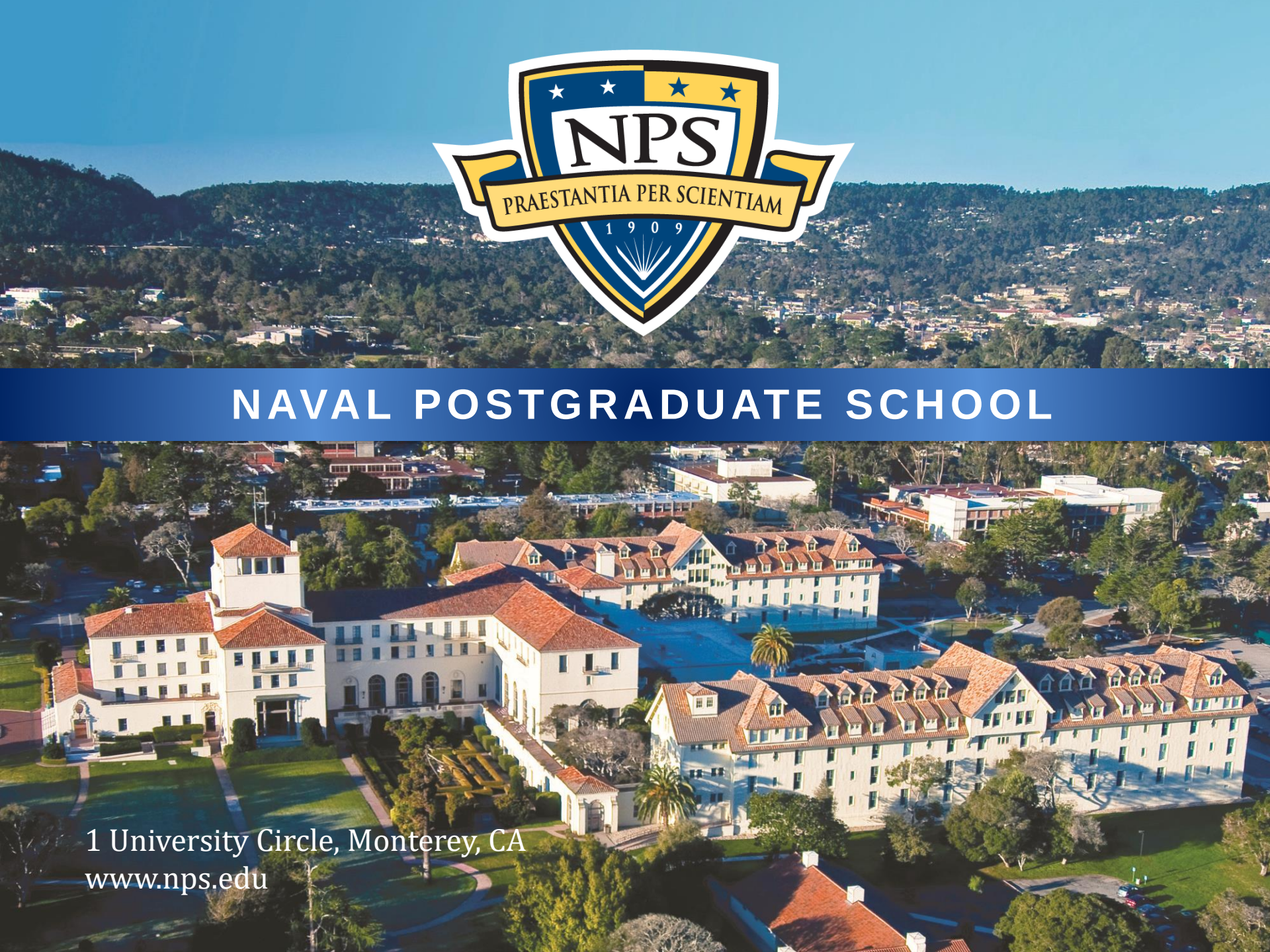
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Customizing the Use of Truth in Negotiation Act (TINA) in DoD

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Roadmap

- Overview of the Study
- Truth In Negotiation Act
- Literature Review
- Customizing the Use of TINA
- Conclusion

Overview

- Purpose: To tailor the use of TINA to various settings that correspond to different combinations of acquisition category, lifecycle stage, and contract type.
- Rationale: One size does not fit all.
- Approach: economics based, incentive centric.
- Policy Implications

Truth in Negotiations Act (TINA)

- TINA was first enacted in 1962 (Public Law87-653)
- TINA requires contractors (often sole-source or near sole-source) to submit “cost or pricing data” that is “current, complete, and accurate.”
- Failing to disclose truthful information could lead to civil or criminal investigation.

Economic Literature Review

- Principal-Agent Contract Setting
- DoD procurement is subject to two kinds of problems
  - *Adverse Selection (Hidden Information)*
  - *Moral Hazard (Hidden Effort)*
- Two objectives of optimal contracting: limit information rents earned by agent; induce the agent's best effort.

Economic Literature Review (cont'd)

- Power of Incentive Schemes varies across the spectrum of contract types
  - FFP: high power incentive scheme
  - CPFF: low power incentive scheme
- The non-commitment nature of the government contracts naturally leads to contractors' fears of being "ratcheted up" if they reveal their lowest possible cost.
- *Cost Padding* incurs excessive costs to the government, such as shifting overhead costs from commercial business to government contracts and engaging in various bookkeeping tricks to manipulate costs.

Economic Literature Review (cont'd): Wang et al. (2016):

Distorted Incentives: Use of TINA with Firm Fixed Price (FFP) Contracts

- Background: there is a current policy push toward more use of FFP contracts.
- FFP contracts *without TINA,* despite many weaknesses, are free of the moral hazard problem.
- FFP contracts, *with TINA*, lose the benefit of being a high power incentive scheme.
- "*TINA cannot force defense contractors to reveal the lowest possible cost that they could produce at if they exerted an optimal effort. Rather, it essentially tells them that the price they negotiate must be close to the cost they actually incur*." ----Rogerson (1994)

Economic Literature Review (cont'd): Wang et al. (2016):

Distorted Incentives: Use of TINA with Firm Fixed Price (FFP) Contracts (cont'd)

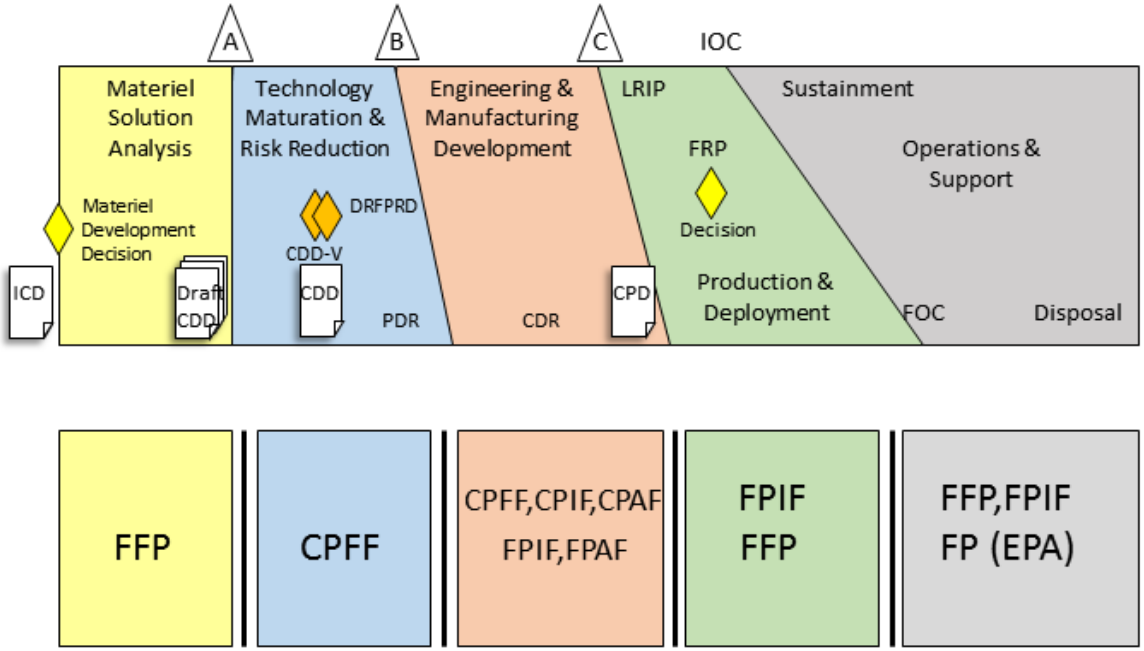
- Using the theoretical framework in Laffont and Tirole (1993), Wang et al. established a simple numeric example to illustrate that the otherwise absent moral hazard problem is created by imposing TINA in the FFP contracting setting. Sometimes even worse, in addition to moral hazard (i.e., shirking) problem, the enforcement of TINA also generates bad incentives for defense contractors to engage in unethical and opportunistic cost padding.
- Wang et.al. (2016) conclude that in the context of FFP contracts for major weapon programs, a lax use of TINA is preferred to a strict one.

Customizing the Use of TINA

- This study extends (Wang et.al. 2016) to a broader scope and greater depth. In particular, we propose to customize the use (or disuse) of TINA in DoD for various contracting scenarios involving specific acquisition category (ACAT I through III), stage of the cycle (Milestones A, B, and C), and contract type.

- The bottom line: we don't believe TINA should be prescribed via a "one-size-fits-all" approach. TINA, at its current form, is essentially a blanket application with very limited exception. In particular, TINA application does not (at least not directly) vary with acquisition category, cycle stage, and contract type.

Figure 4: Typical Contract Types by Acquisition Phase



CDD: Capability Development Document
CDD-V: Capability Development Document-Validation
CDR: Critical Design Review
CPAF: Cost Plus Award Fee
CPD: Capability Production Document
CPFF: Cost Plus Fixed Fee
CPIF: Cost Plus Incentive Fee
DRFPRD: Development Request for Proposal Release Decision
FFP: Firm Fixed Price
FOC: Full Operational Capability
FP (EPA): Fixed Price Economic Price Adjustment
FPIF: Fixed Price Incentive Firm
FRP: Full Rate Production
ICD: Initial Capabilities Document
IOC: Initial Operational Capability
LRIP: Low-Rate Initial Production
PDR: Preliminary Design Review

Table 3: Customizing the Use (Disuse) of TINA

	Pre-Milestone A (Material Solution Analysis)	Pre-Milestone B (Technology Maturity & Risk Reduction)	Pre-Milestone C (Engineering & Manufacturing Development)	Production and Deployment	Operations and Support
MDAP	FFP (TINA)	CPFF (TINA)	CPIF (No TINA)	FPIF (No TINA)	FFP (No TINA)
ACAT II	FFP (TINA)	CPIF (TINA)	CPAF (TINA)	FPIF/FFP (Maybe/Maybe Not TINA)	FFP (Maybe/Maybe Not TINA)
ACAT III	FFP (TINA)	CPAF (TINA)	FPIF (TINA)	FFP (TINA)	FFP (TINA)

- as the acquisition category descends from I to III, within the same life cycle stage (with the exception of the first and last stage), we gradually shift toward the contract type that allocates more risk to the contractor and in the meantime taking away the risk from the DoD's shoulder.

Table 3 Analysis

- ***For the red-colored cells***, i.e., ACAT I (MDAP) starting from Pre-Milestone C and continue through the rest of the acquisition cycle, we propose to do away with the use of TINA. The polar case here, that is, the use of FFP in the context of MDAP, is thoroughly analyzed by Wang et.al. (2016).

- It is worth noting that for ACAT I (MDAP), even at the very late stage of the acquisition cycle, *due to the extreme complex technology and production process*, significant information asymmetry nevertheless exist between the contractor and the DoD. Consequently, the unverifiable part of the production cost is still significant and there is plenty of room for contractors to shirk or engage in cost padding.

- The other two red-colored cells, i.e., MDAP at Pre-Milestone C (Engineering & Manufacturing Development), and Post-Milestone C (Production and Deployment), adopt CPIF and FPIF, respectively. Both CPIF and FPIF belong to incentive contracts which are designed to induce cost-saving effort from contractors. To the extent that TINA exposes compliance risk to contractors in case of ex-post unfavorable cost variance, imposing TINA in these two cells would have similar unintended consequence as discussed in Wang et.al (2015), hence we recommend similar fix, i.e., the disuse of TINA.

Table 3 Analysis(cont'd)

- ***For the yellow-colored cells***, we suggest no changes to the current TINA use. These cells include:

1) ACAT III across all the life cycle stages.

Modest information asymmetry between the DoD and the contractor. Therefore, the verifiability of the program cost is good. When most of the cost information is verifiable, TINA is an effective mechanism to deter defective pricing.

2) ACAT II life cycle stages up to Pre-Milestone C

Under this category, CPIF and CPAF are prescribed for Pre-Milestone B and Pre-Milestone C, respectively. In general, cost-plus contracts inherently suffer from moral hazard problem. Hence removing TINA does not make the problem go away. However, TINA does reduce the "defective pricing" incentive by imposing the litigation risk, at least for the verifiable part of the program cost. So the net benefit of "with TINA" minus "without TINA" is positive and we suggest a "stay-put" strategy.

For the cell that intersects ACAT II and Pre-Milestone A (Material Solution Analysis), the prescribed contract type is FFP, yet we suggest the use of TINA. This is in contrast to what we suggest for the polar case discussed in ACAT I. The major reason is that for Pre-Milestone A, which is a pre-system acquisition stage, most of the conceptual refinement work is performed through analogy or parametric estimating methods. To the extent that the estimation is based on similar existing item or mathematical model, a big part of the cost is verifiable. As argued before, TINA is an effective way of deterring "defective pricing" when the cost information is verifiable.

3) ACAT I (MDAP) life cycle stages before Pre-Milestones B

For the same reason mentioned in the last paragraph, for the FFP contract used in Pre-Milestone A MDAP, we proposes to keep TINA in place. For the cell that intersects MDAP and Pre-Milestone B, TINA is also retained to mitigate the incentive of engaging in "defective pricing."

Table 3 Analysis(cont'd)

For the purple-colored cells, we recommend flexible use of TINA. Use or disuse of TINA should be dependent upon individual cases. On one hand, ACAT II, even at the last two stages of life cycle, should still demonstrate non-trivial information asymmetry between the DoD and the contractor, therefore our worry about the contractor's ill incentive under TINA and the related "moral hazard" problem remains. On the other hand, to the extent that ACAT II is much smaller and less complex than ACAT I (MDAP), the degree of information asymmetry should be much less severe than under MDAP. If the major part of the program cost is verifiable, then enforcing TINA can effectively prevent "defective pricing" from happening. Decision makers must run a horse-racing between the two offsetting factors and accordingly choose the use or disuse of TINA to maximize social welfare. For example, one can argue that if Technology Readiness Level (TRL) reaches 8 or above, then use of TINA is preferred.

Conclusions

- One size does not fit all.
- In some settings where TINA is misplaced, we propose to drop TINA to remove the ill incentives and consequent unintended negative consequences. In other settings where TINA brings more benefit than cost, we recommend to keep TINA in place. In a few settings where the judgment is not unambiguous, we propose to leave the discretion to decision makers.

Additional Slides

Figure 2: Defense Acquisition Process

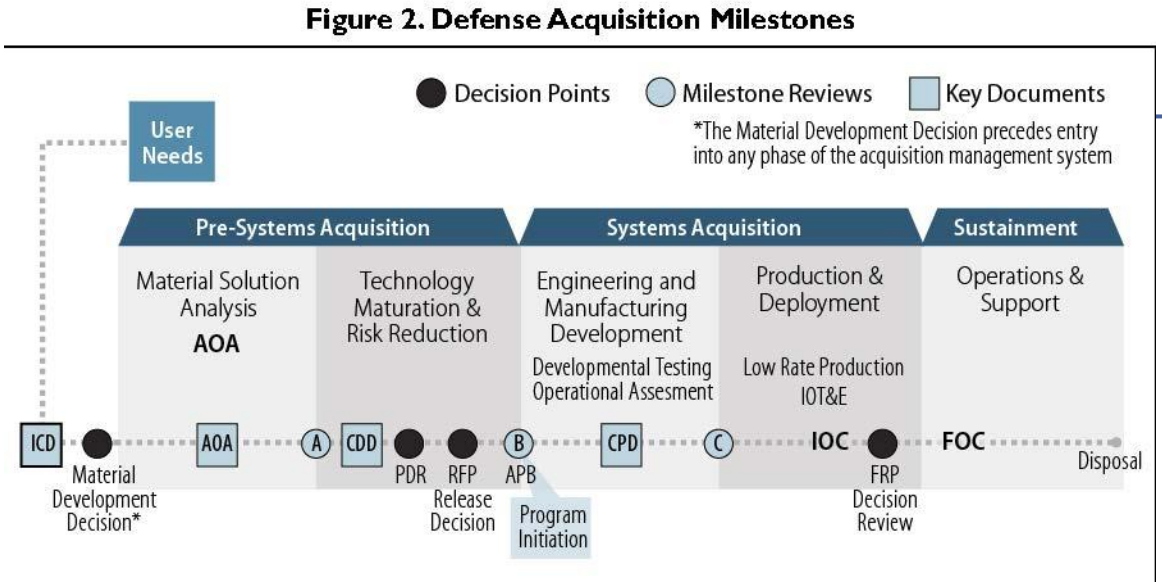


Figure 3: Risk and Contract Types