

NATIONAL RECONNAISSANCE OFFICE

Using Total Lifecycle Cost as the Basis for Proposal Cost Evaluation

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About the NRO

- ✦ The National Reconnaissance Office (NRO) is:
 - ✦ The national program to meet the U.S. Government's intelligence needs through spaceborne reconnaissance
 - ✦ A Department of Defense (DoD) agency and an element of the Intelligence Community
 - ✦ Funded through the National Intelligence Program and the Military Intelligence Program portions of the federal budget
- ✦ The NRO's existence was declassified by the Deputy Secretary of Defense on September 18, 1992





Overview

- + Total Lifecycle Cost (TLCC)
- + Case Study
- + Benefits of TLCC approach to source selection
- + Challenges of TLCC
- + Overcoming TLCC Challenges



Typical Government Source Selection

- + Detailed requirements define the product or service the government wants delivered
- + Government reference architecture is often provided to instruct the contractor on how they want the system designed
- + Maintenance costs of system may or may not be considered
- + Cost evaluation uses the contractor's bid price adjusted to determine most probable cost



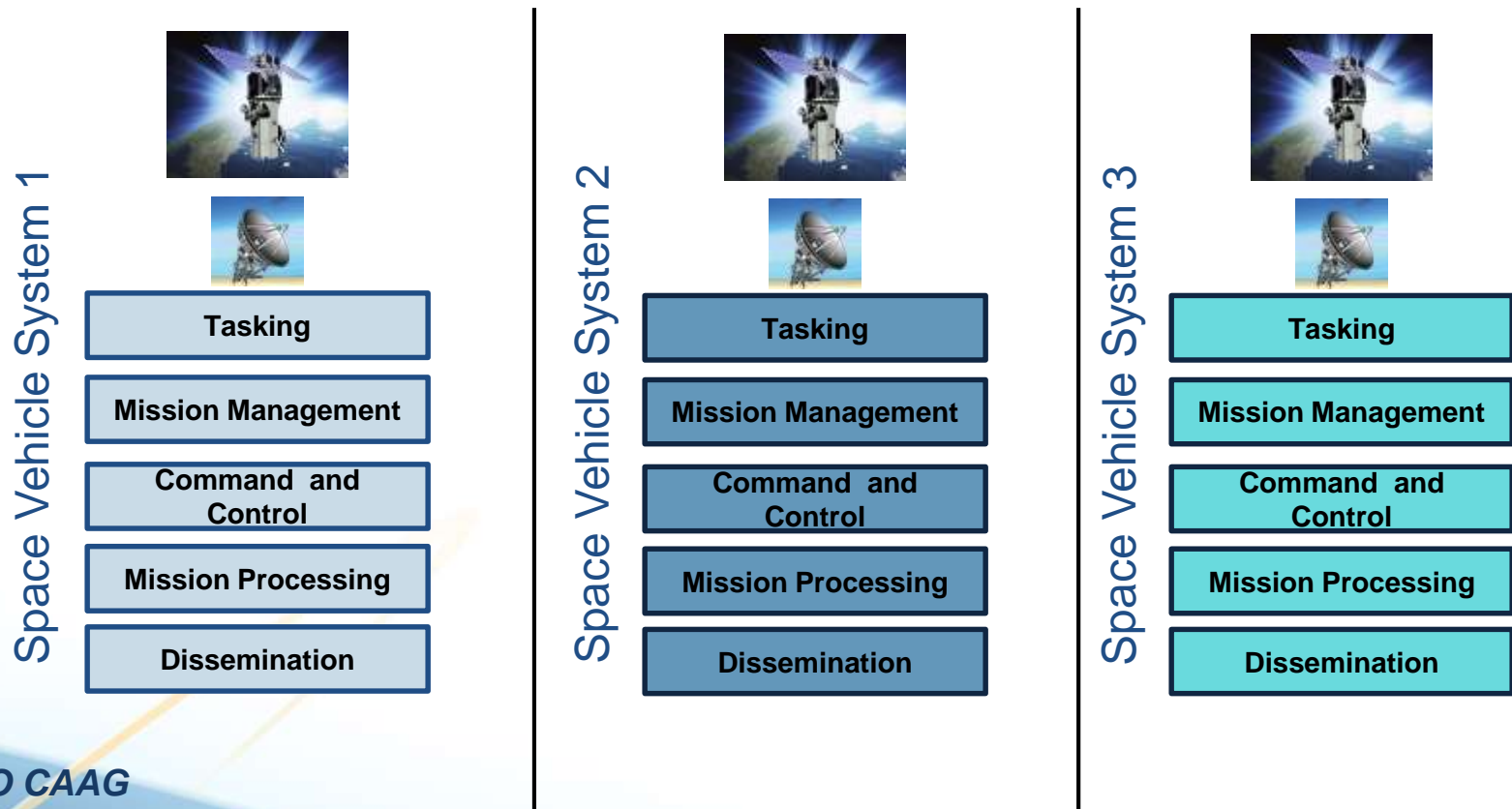
Source Selection Using TLCC

- + High level requirements and a Statement of Objectives define the product or service the government wants delivered
- + Contractors may be given freedom to propose new innovative architectures
- + Cost evaluation includes:
 - + Contractor's bid price adjusted to determine most probable cost
 - + Maintenance for the system
 - + Operations
 - + Legacy sustainment until transition
 - + Impacts to government furnished equipment / IT infrastructure
 - + Impacts to other systems / interfaces



Case Study: Space Vehicle Ground System

- + Government seeks to consolidate stove-piped Space Vehicle ground systems in order to reduce costs through
 - + Consolidated O&M
 - + Extensibility to future Space Vehicles (SVs)





Typical Ground System Components



✦ Space Vehicle: Electro-Optical SV



✦ Ground Terminal: The direct interface with the space side of things

Tasking

✦ Tasking: User requested images of points or areas on earth

Mission Management

✦ Mission Management: Evaluates collection opportunities and develops SV schedule

Command and Control

✦ Command and Control: Turns schedule into SV commands manages SV state

Mission Processing

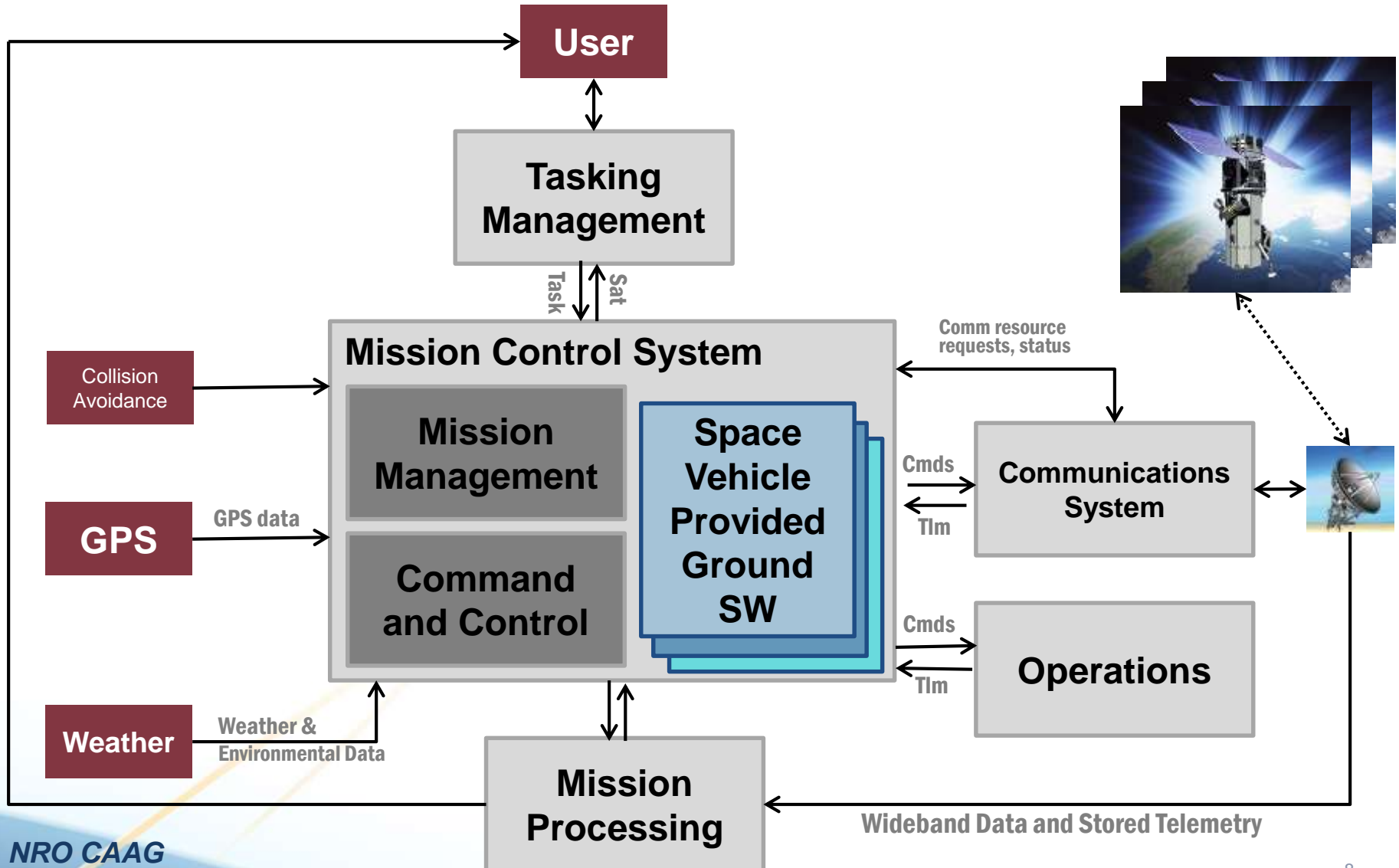
✦ Mission Processing: Receives data and develops image products

Dissemination

✦ Dissemination: Distributes image products to users



Case Study: Space Vehicle Ground System





Benefits of Using TLCC in Source Selection

- + Innovation – enables novel architectures to be proposed by contractor
- + Identifies hidden / unforeseen costs such as external interface modifications
- + Identifies costs regardless of directorate or agency to which they are attributable
- + Identifies costs to the government for Operations and GFE that are not part of the contract
- + Enables inclusion of costs for future requirements that are not part of the initial bid



TLCC Estimating Challenges

- + Legacy sustainment through transition
 - + Existing sustainment contracts may not run until transition date
 - + Maintenance effort will likely be reduced when system is being replaced due to eliminating enhancements and low priority bug fixes
 - + Contractors may attempt to game TLCC based on unreasonably aggressive transition schedule
 - + Incumbent contractor has advantage if their legacy system has high sustainment costs
- + Contractors may not adequately scope effort not on contract
 - + SV Provided HW, Operations, Interface modifications, GFE
- + Contractor may propose cost effective operations that are unlikely to be adopted
 - + Operations staffing / automation
 - + Policy considerations



Overcoming TLCC Challenges

- + Legacy sustainment through transition
 - + Independent schedule analysis and adjustments based on historical data
 - + ESLOC / Man Month
 - + Launch support and initialization timelines
- + Contractors may not adequately scope effort not on contract
 - + Identify range of historical software sizing by software functional components
 - + Identify historical costs for external interface modifications
 - + Independently evaluate GFE costs based on historical data
- + Contractor may propose cost effective operations that are unlikely to be adopted
 - + Adjust contractor proposed operations to reflect likely government Concept of Operations



Conclusion

- + TLCC enables innovation in contractor proposals
- + Enables decision making through insight on enterprise costs
- + Requires cost estimation support to source selection team
- + Requires historical cost, schedule, and sizing data to build defensible estimates that could withstand protest



Questions?

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