



TMC Resource Evaluation

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- ❖ Program Perspective – Cost & Schedule Performance
- ❖ Purpose of a TMC Resource Review
- ❖ What do we do and how do we do it?
- ❖ What do we need from the proposal?
- ❖ Simplification Thoughts

Observations from Cost/Schedule Study



Source: 2007 study of recent flight projects spanning the SMD discipline areas, management models, and mission classes

- ❖ Cost history data for 21 of 24 projects studied shows cost growth – 22% on average, and up to 98% over plan
 - Plans include reserve, so growth is over/above reserve
 - Aggregate growth represents a combined impact of \$2 Billion to SMD's mission portfolio (on a \$9 B base)
 - 15 projects show a substantially increased rate of internal cost growth *after* CDR. (Internal = factors within project's control)

- ❖ Schedule history data indicates schedule slips for 19 of the 24 projects studied: 5 – 42 month delays.

Purpose of a TMC Resource Review



- ❖ Resources – cost and schedule – are part of the overall TMC assessment of *implementation risk*
- ❖ We answer this question:

***Does the project have enough resources
to do what they propose?***

- ❖ Not this question: How much will it cost?

Cost Review: What and How?



Analysis of Proposal

- ❖ Basis of Estimate
 - What techniques were used?
 - Complete?
- ❖ Design Heritage
 - Credible claims?
 - Realistic savings claimed?
- ❖ Project Reserve
 - Levels & availability
 - Management strategy
- ❖ Project Plans Agree:
 - Schedule
 - Funding Profile
 - Staffing Plan
- ❖ Other factors

Independent Cost Estimate (ICE)

- ❖ Two estimates (sometimes more) prepared by separate analysts using different tools
- ❖ Tools:
 - Cost Models
 - Analogy with other projects
 - Constructive estimates (rare)

Cost Threats/Risks
Threat Mitigations

What Cost Models?



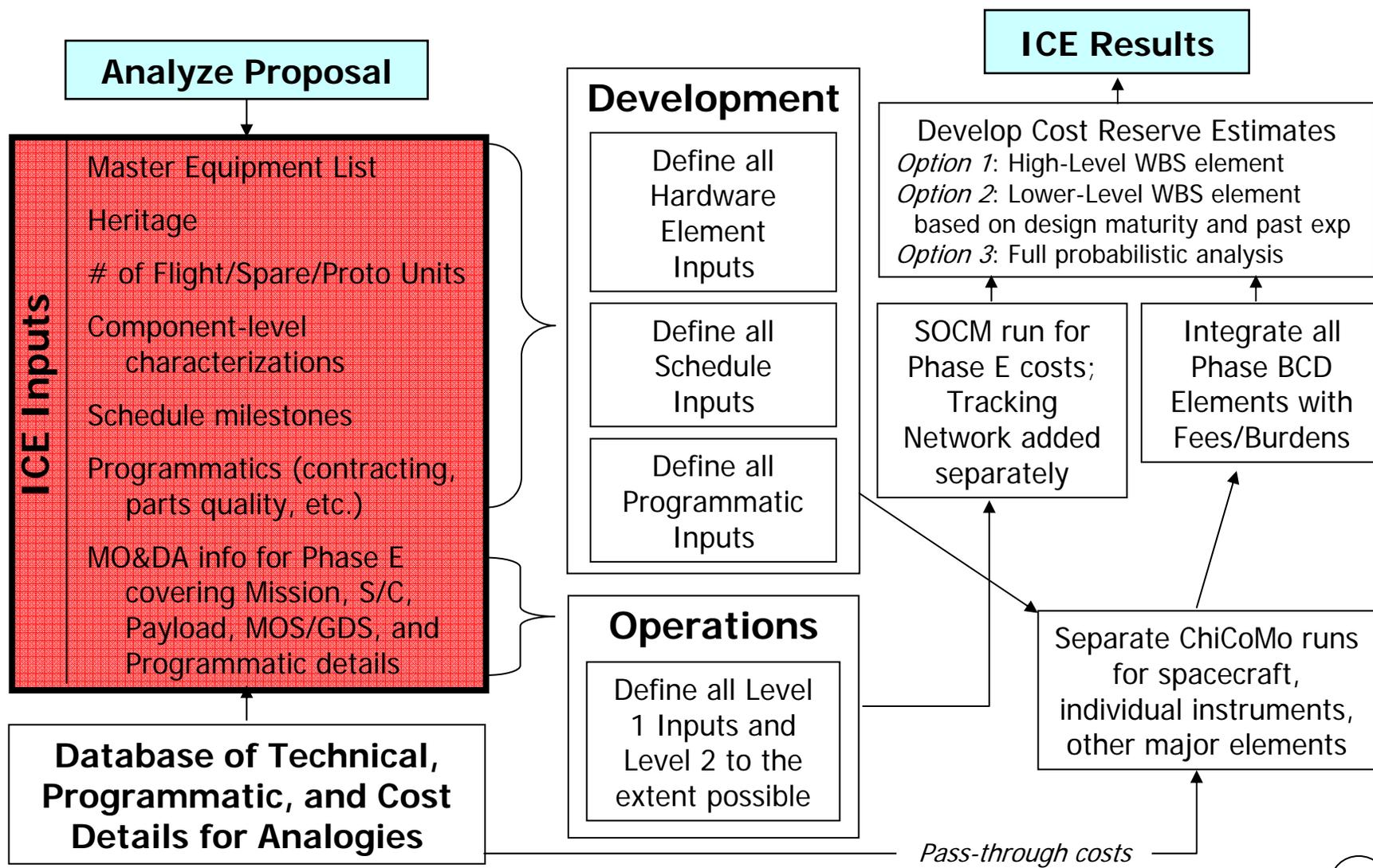
- ❖ Are your worst fears realized...

$$\text{\$} = a \cdot (\text{Mass})^b$$

...or have cost models progressed?

- ❖ Good News: current models use more design info and detailed understanding of implementation-specific plans
- ❖ Bad News: primary source of information is proposer

Sample ICE Process Flow



AO Simplification & Other Thoughts



Currently, Proposer Must

Understand cost well enough to commit to $\leq 20\%$ growth during the Phase A study

Meet firm requirement for a substantial reserve

Stay within the program cap

Deal with any funding profile limits imposed by HQ budget reality

Changes to Consider

1. Keep the design detail, but shorten or eliminate the Step-1 proposal cost submission

too early to commit anyway

2. Let the proposer specify project reserve and justify it

negotiate later?

3. Relax the firm cap

specify a range instead?

4. Eliminate funding profile constraints

*Don't have the money?
Then don't start!!*