



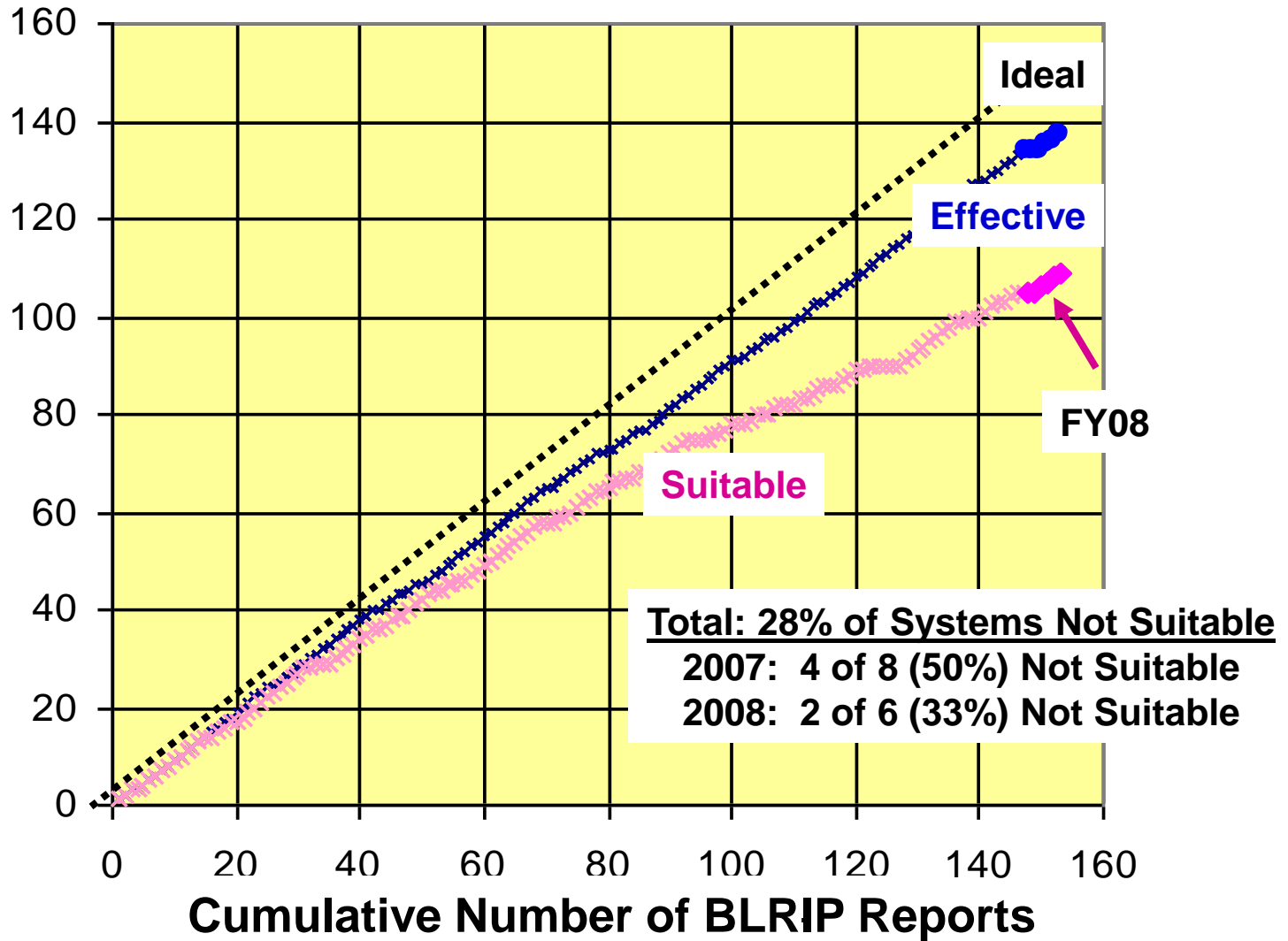
OPERATIONAL TEST AND EVALUATION  
DIRECTOR



# Cumulative IOT&E Results Through FY 2008



Number Effective And Suitable





# DSB DT&E Taskforce Main Conclusion

May 2008



- “. . . the single most important step necessary to correct high suitability failure rates is to ensure programs are formulated to execute a viable systems engineering strategy from the beginning, including a robust reliability, availability, and maintainability (RAM) program, as an integral part of design and development. No amount of testing will compensate for deficiencies in RAM program formulation.”



# Section 231 Report to Congress

## Core T&E Principles

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1. T&E should concentrate on measuring improvements to mission capability and operational support based on user needs;
2. T&E programs should experiment . . . learn and understand the strengths and weaknesses of a system and its components, and the effect on operational capabilities and limitations;
3. DT and OT activities should be integrated;
4. T&E should begin early, be more operationally realistic, and continue through the entire system life-cycle;
5. Evaluation should be conducted in the mission context expected at time of fielding to the user . . . in terms of operational significance;
6. Evaluations should include a comparison against current mission capabilities;
7. Evaluations should take into account all available data and information;
8. T&E should exploit the benefits of appropriate M&S.



# New Acquisition/T&E Policies

McQueary/Finley Memo on Assessment of Op Test Readiness  
(21 May 2007)

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- The DUSD(A&T) shall conduct an independent Assessment of Operational Test Readiness (AOTR) for all ACAT ID programs and special interest programs designated by the USD(AT&L)
- The CAE shall consider the results of the AOTR prior to making a determination of materiel system readiness for IOT&E.





# New Acquisition/T&E Policies

Young Memo on Competitive Prototyping (19 Sep 2007)

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- All acquisition strategies requiring USD (AT&L) approval must be formulated to include competitive, technically mature prototyping through MS B.



# New Acquisition/T&E Policies

## Young-McQueary T&E Policy Letter - (22 Dec 2007)

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- DT and OT test activities shall be integrated and seamless
- Evaluations shall include a comparison with current mission capabilities
- T&E should assess improvements to mission capability and operational support based on user needs
- To more effectively integrate DT and OT, evaluations shall take into account all available and relevant data and information, including contractor data
- Operational evaluators will continue to fulfill their statutory roles in providing assessments of operational effectiveness, operational suitability, and survivability to the Milestone Decision Authority
- To realize the benefits of modeling and simulation, T&E will be conducted in a continuum of live, virtual, and constructive environments.



# New Acquisition/T&E Policies

McQueary-Finley Memo on Reliability Improvement WG  
(15 Feb 2008)

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- Ensure programs are formulated to execute a viable systems engineering strategy, including a RAM growth program.
- Ensure government organizations reconstitute a cadre of experienced T&E and RAM personnel.
- Implement mandated integrated DT and OT, including the sharing and access to all appropriate contractor and government data and the use of operationally representative environments in early testing.





# New Acquisition/T&E Policies

McQueary-Finley Memo defining Integrated Testing (May 2008)



- “Integrated testing is the collaborative planning and collaborative execution of test phases and events to provide shared data in support of independent analysis, and evaluation.”



# New Acquisition/T&E Policies

Young Memo on RAM Policy (July 2008)



- The Service Secretaries are directed to establish Service policy to do the following:
  - Effective collaboration between the requirements and acquisition communities
  - Development contracts and acquisition plans must evaluate RAM during system design.
  - Evaluate the maturation of RAM through each phase of the acquisition life cycle.



# Senior Leadership Buy-In of New Reliability/T&E Policies

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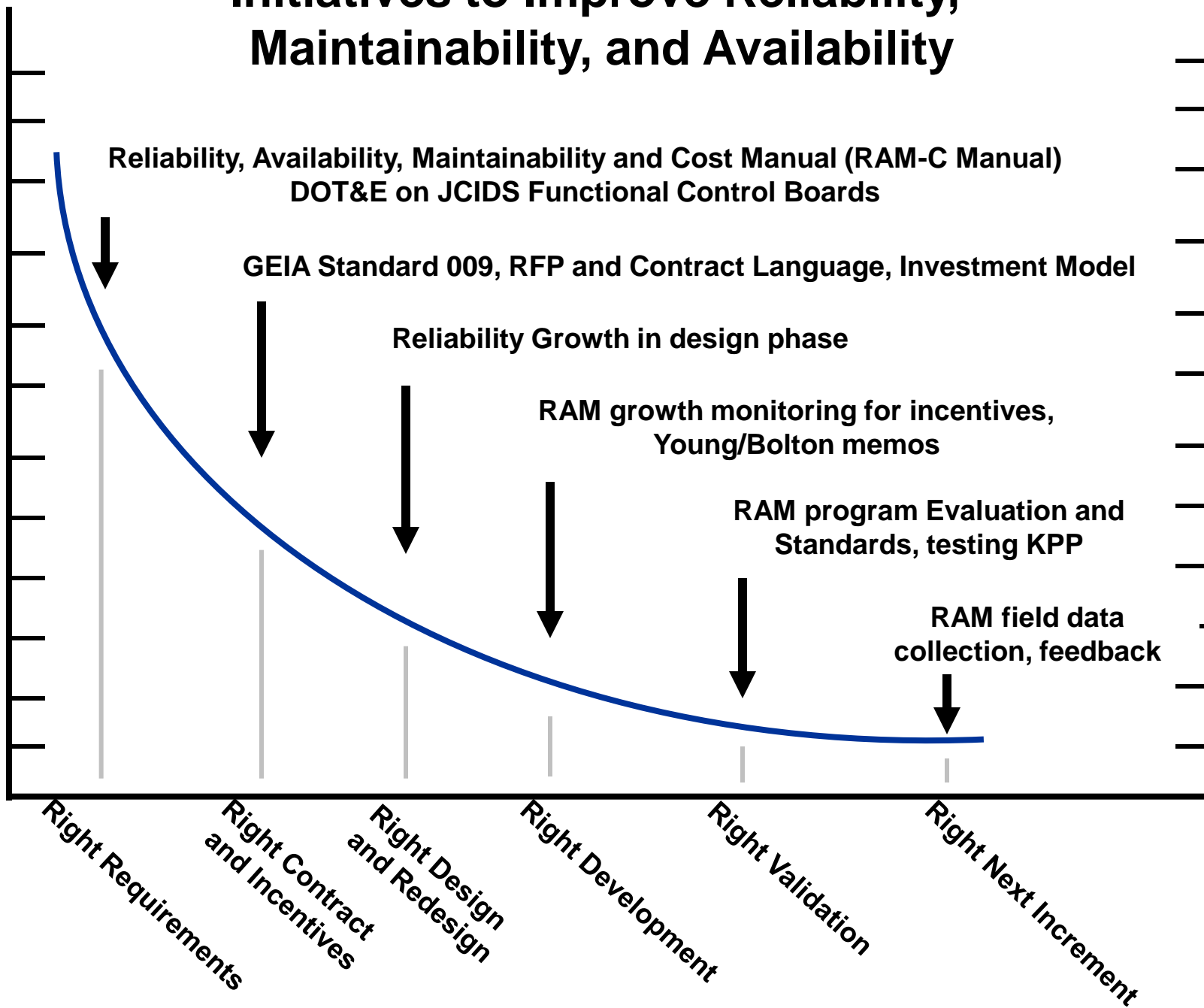
“Having performance is important, but not as important in most cases, as having reliability.”

- Hon. Donald Winters, Secretary of the Navy (Sept 3, 2008)

# Initiatives to Improve Reliability, Maintainability, and Availability

**Number of Failures in the Field**

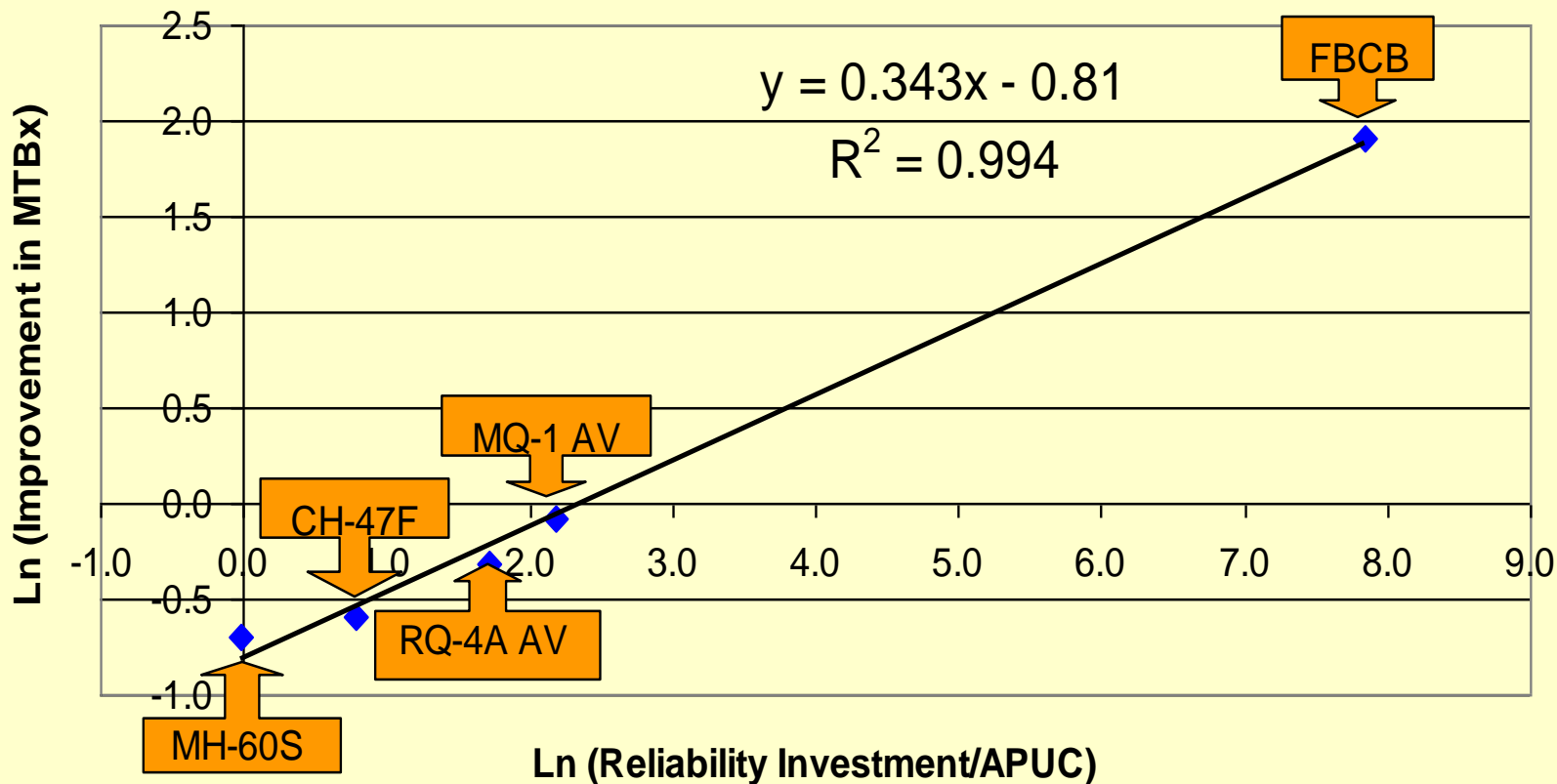
**Ownership Cost**





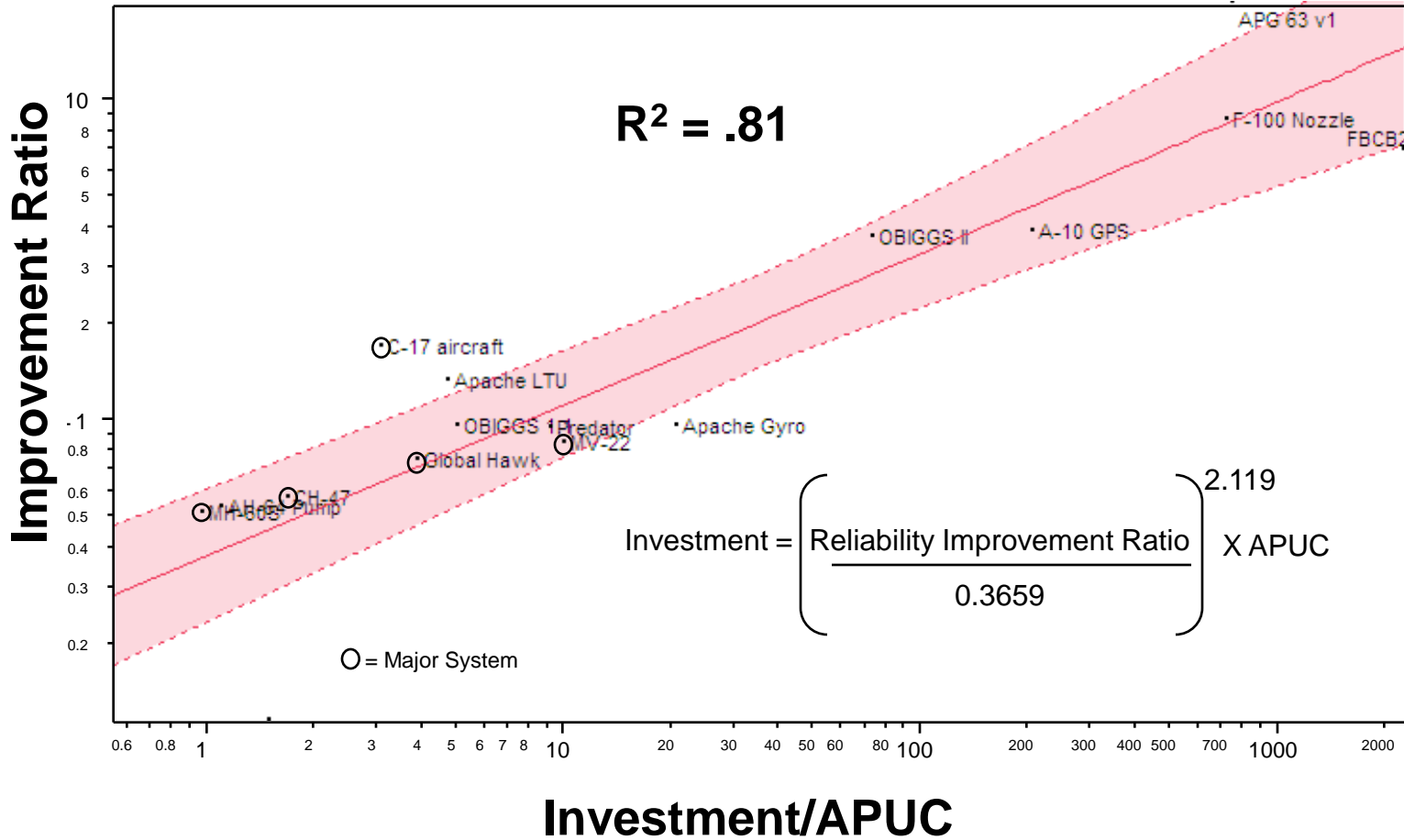
# Phase I: Empirical Research

## Reliability Improvement vs. Investment





# Phase IIA (Basic Model)







# Phase III: Notional Example

## Effect of Reliability Investment on System Cost (UAV)

