

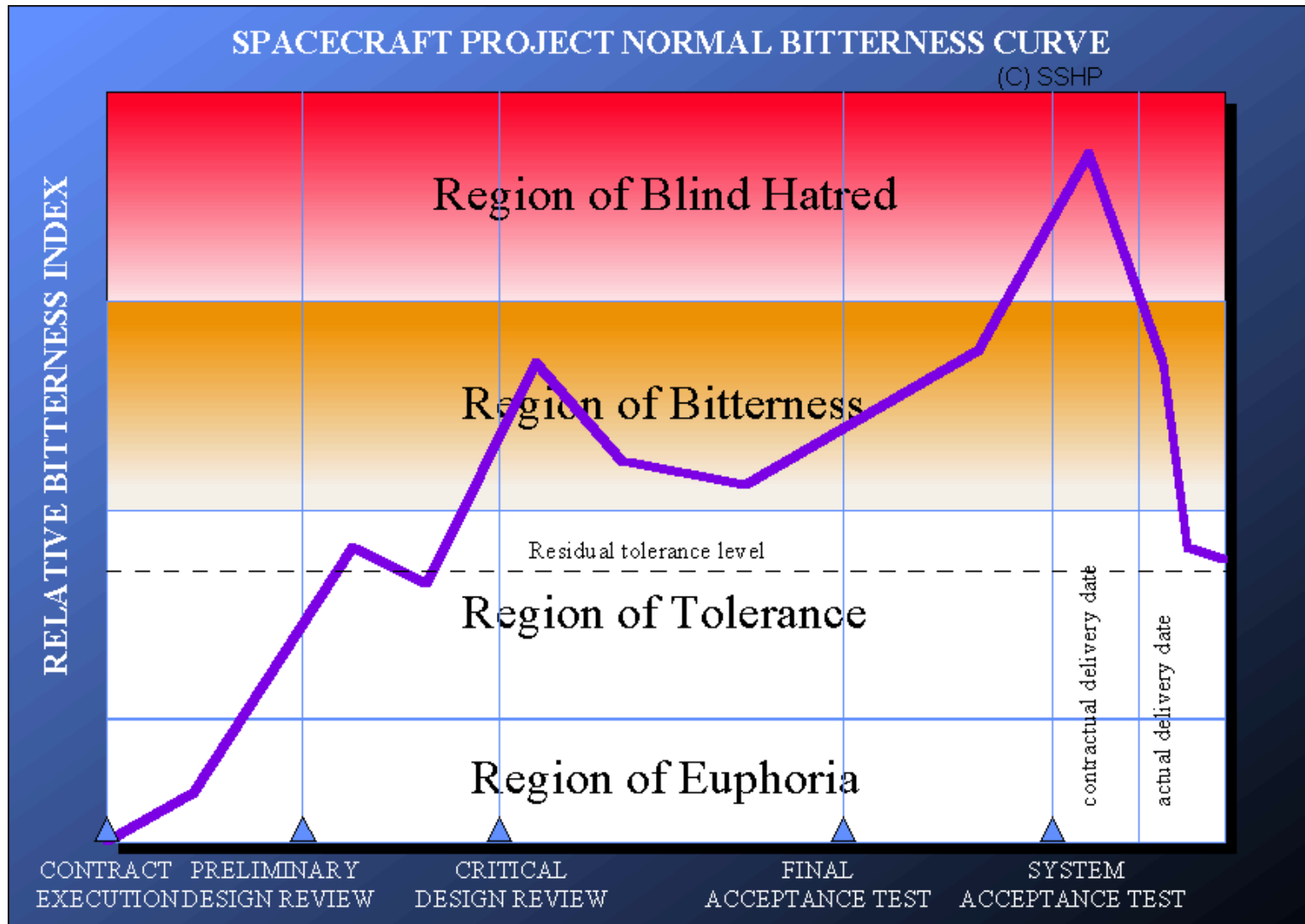


Program Design & Techniques- Improving the Probability of Success

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January 18, 2011

A Familiar Problem



From DoD Systemic Program Findings:



“...We Don’t Start Them Right”

- Insufficient requirements analysis and definition at program initiation
 - Not tangible, measurable, testable, stable
 - User R&M requirements are not underpinned by sound rationale
- Acquisition strategies based on poor technical assumptions, competing budget priorities, and unrealistic expectations
- Budget not properly phased
- Lack of rigorous systems engineering approach
- Schedule realism – success oriented, concurrent, poor estimation and/or planning
- Inadequate test planning – breadth, depth, resources
- Optimistic/realistic reliability growth – not a priority during development
- Inadequate software architectures, design/development discipline, and organizational competencies
- Sustainment/life-cycle costs not fully considered (short-sighted)

“Sharing Lessons Learned Based on Systemic Program Findings”, Dave Castellano, Deputy Director, Assessments and Support, Sys SW and Engrg, Deputy USecDef for A&T, US DoD, 16 Jan 2008



“...We Don’t Manage Them Right”

- Insufficient trade space
 - Resources, schedule, performance, requirements
- Insufficient risk management
- Inadequate IMP, IMS, EVMS
- Most programs lack quantifiable entrance/exit criteria
- Maturing “suitability” (e.g., RAM) is not always a priority
- Maturing “effectiveness” is not always a priority
- Concurrent test program; inadequate scope due to schedule and resource insufficiencies, etc.
- Inadequate OTRR process – no strong DT&E gate prior to IOT&E
- Inadequate government staff; Inexperienced and/or limited contractor staffing
- Poorly defined IPT roles, responsibilities and authority
 - Overall poor communications across government and industry staff

No Single Solution Addresses These Issues

Starting a Program Right



Program Planning Phase

- Clear and concise understanding of contract requirements
- Create essential program planning documents
- Perform independent reviews of proposed approach

Pre-Contract and Start-Up

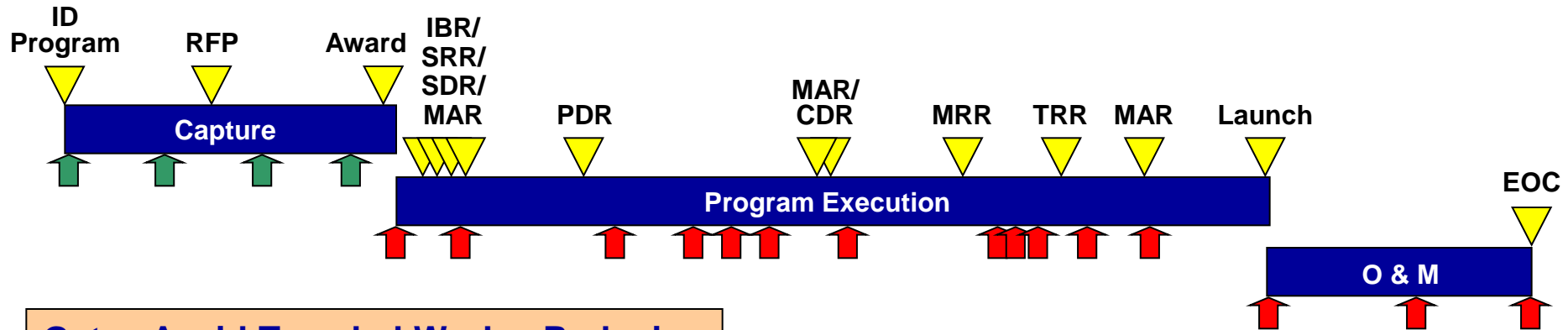
- Documented Integrated Master Plan (IMP), Integrated Master Schedule (IMS) & Contracts Data Requirements List (CDRLs) requirements
- Establish configuration, cost, schedule, technical, organization and IT plans
- Functions assist in maturing products to reduce risk

Contract Execution

- Expand enterprise awareness of program contract requirements
- Close gaps using functional experts
- Provide oversight through senior leaders

Program Start Strengthened by Proactive Enterprise Commitment

Managing A Program Right



Gates Avoid Traveled Work – Reducing Risk, Lowering Total Cost

- Establish clear priorities
- Eliminate bad multitasking – focus and finish
- Limit the release of WIP to deliver earlier
- Prepare! Start to finish
- Use checklists to prevent defects and traveled risk
- Face-into and resolve issues quickly
- Drive daily execution

Gated processes becoming industry standard

Structure and Discipline

- ✓ Gate Criteria
- ✓ Gate Reviews
- ✓ Criteria check lists
- ✓ Sign-off: “Giver / Receiver”
- ✓ Gate Liens
- ✓ Gate closure

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Guidelines for Space Systems Critical Gated Events

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Gates Provide a Structured Roadmap

