

# Integrating Technical, Programmatic, and Business Decisions



Foundational Learning



Workflow Learning



Performance Learning

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# Snapshot

- Delusions (charts 3-4)
- Challenge (chart 5)
- Risk and Opportunity Levers/Categories (charts 6-7)
- Waterfall (chart 8)
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## Backup

- Risk and Opportunity Fundamentals (charts 23-27)
- Risk Statements (charts 28-30)
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- Common Pitfalls (charts 33-34)
- DoD Risk & Opportunity Plan (chart 35)



# Delusions of Success

How Optimism Undermines Executives Decisions

- Cognitive Bias
  - Anchoring
  - Competitor neglect
  - Organizational pressure
  - Status quo
  - Confirming evidence
  - Sunk cost



# Delusions of Success

How Optimism Undermines Executives Decisions

- Correct Forecasting
  - Inside view vs. outside view
    - Outside view – to commit as an investment
    - Inside view – for those that promote or guide action
  - Introduce forecasting methods to counteract personal and organizational optimism



# Leadership/ Professional Challenge: Risks and Opportunities

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- Planning
- Execution



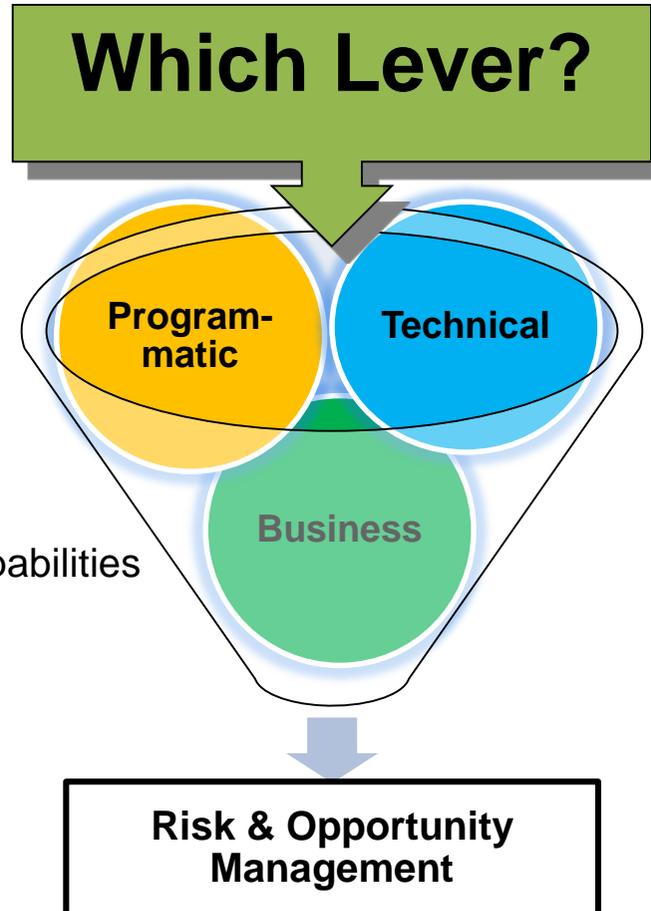
# Risk & Opportunity Levers

## Organization

- Structure
- Leadership
- Management
- Bias
- Culture
- External factors
- Politics
- Rules
- Manpower

## Environment

- Concurrency
- Industrial Capabilities
- Customers
- Suppliers
- Stakeholders
- Congress
- Oversight
- Security



## Program

- Threats
- Processes
- Requirements
- Technology
- Technical Baseline
- Integration
- Test and Evaluation
- Logistics
- Production/Facilities
- Schedule
- Cost/Budget



# Risk & Opportunity Categories

## Technical Events

- Requirements
- Technology
- Engineering
- Integration
- Test
- Manufacturing
- ?

## Programmatic Events

- Estimates
- Program Planning
- Program Execution
- Communication
- ?

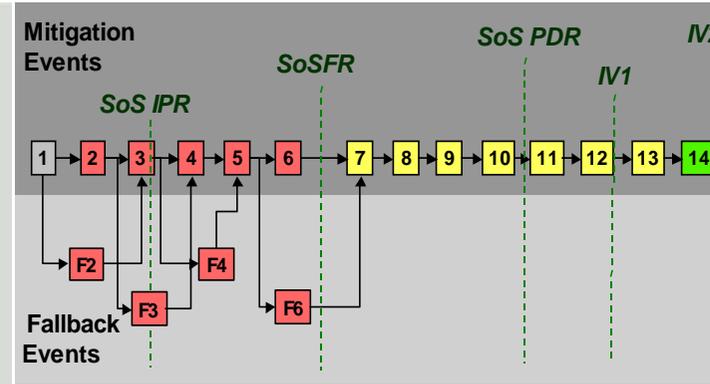
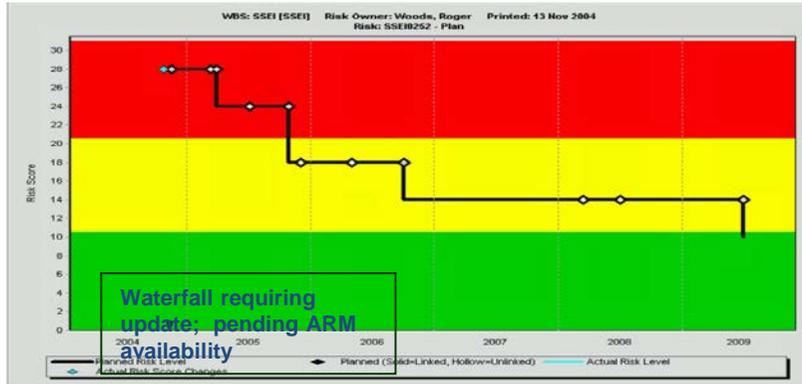
## Business Events

- Dependencies
- Resources
- Priorities
- Regulations/Laws
- Market
- ?

- Are these the same for planning work and executing work?
- How do the R's and O's adjust as you move through the life-cycle of a program?

<http://www.acq.osd.mil/se/docs/RIO-Guide-Jun2015.pdf>

# Risk Waterfall Example



**Actual/Planned Events**

#	Event Title	Person Responsible	Date	Risk
0	Risk Identified	Woods, Roger	10/12/2004	H 4-5
1	Reliability Improvement Program (RIP) defined	Knapczyk, Brian	1/31/2005	H 4-5
2	SoS RAM-T Requirement Performance Assessment / Capability Alignment for IPR-2	Knapczyk, Brian	3/7/2005	H 3-5
3	Reliability Improvement Program (RIP) Initiated	Knapczyk, Brian	3/14/2005	H 3-5
4	SDD-141 & SDD-142 Redundancy Trade Study Results identified and communicated to RAM-T Requirement Team	Knapczyk, Brian	7/6/2005	H 3-5
5	Redundancy / Reliability Improvement Program (RIP) Results incorporated into requirements process and allocated to IPTs	Knapczyk, Brian	10/30/2005	H 3-5
6	SoS RAM-T Requirement Performance Assessment / Capability Alignment for SoSFR	Knapczyk, Brian	8/8/2005	H 3-5
7	Conduct RAM-T TIM to evaluate Progress Towards PDR	Knapczyk, Brian	2/3/2006	H 3-4
8	SoS RAM-T Requirement Performance Assessment / Capability Alignment for IPDR	Knapczyk, Brian	7/3/2006	H 2-4
9	Conduct RAM-T TIM to evaluate Progress Towards PDR	Knapczyk, Brian	12/14/2007	H 2-4
10	SoS RAM-T Requirement Performance Assessment / Capability Alignment for PDR	Knapczyk, Brian	7/3/2008	H 2-4
11	Conduct RAM-T TIM to evaluate Progress Towards IV1	Knapczyk, Brian	8/8/2008	H 2-4
12	IV1 Completion & Successfully Meet RAM-T Key Parameters (Ao, MR, MTBSA, & MTBEFF)	Knapczyk, Brian	9/25/2008	H 2-4
13	Conduct RAM-T TIM to evaluate Progress Towards IV2	Knapczyk, Brian	9/25/2009	H 2-4
14	IV2 Completion & Successfully Meet RAM-T Key Parameters (Ao, MR, MTBSA, & MTBEFF)	Knapczyk, Brian	9/30/2010	L 1-4

**Alternate/Fallback Events**

#	Event Title	Person Responsible	Date	Risk
F2	RAM-T Working Group Alternate Approach for Alignment	Knapczyk, Brian	3/7/2005	H 3-5
F3	Tiger Team Formed - Realign Expectations/Requirements with goals	Knapczyk, Brian	3/14/2005	H 3-5
F4	Tiger Team Formed - Realign Expectations/Requirements with goals	Knapczyk, Brian	7/6/2005	H 3-5
F6	Enhanced Prognostics Implementation	Knapczyk, Brian	8/8/2005	H 3-5



## R&O Identification

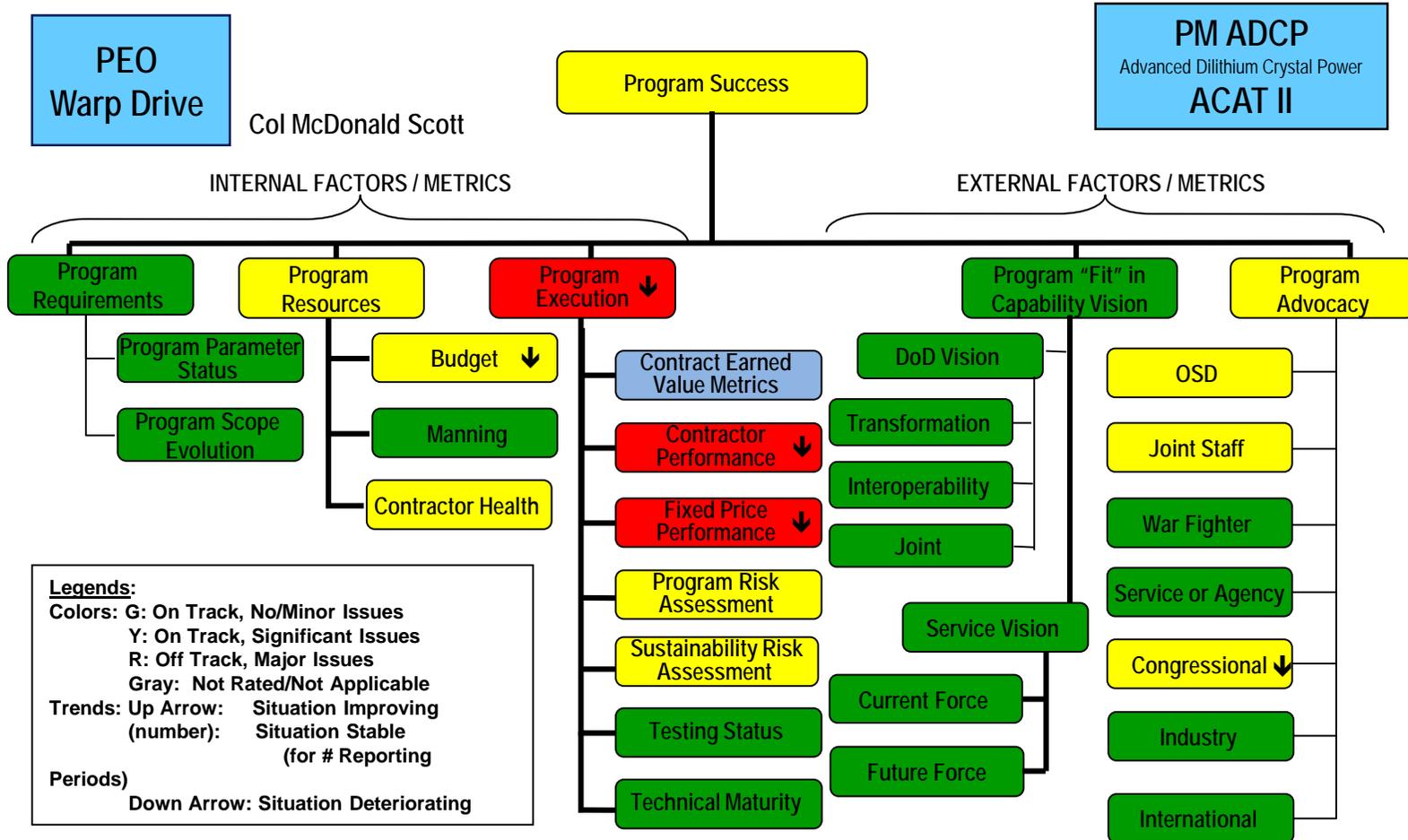
- Probability of Program Success
- Willoughby Templates
- RBS/WBS
- Scenario
- Pre-mortem

## R&O Mitigation/Pursue

- NDAA 2016, Section 822
- DoD Risk, Issue, & Opportunity Management Guide, page 33

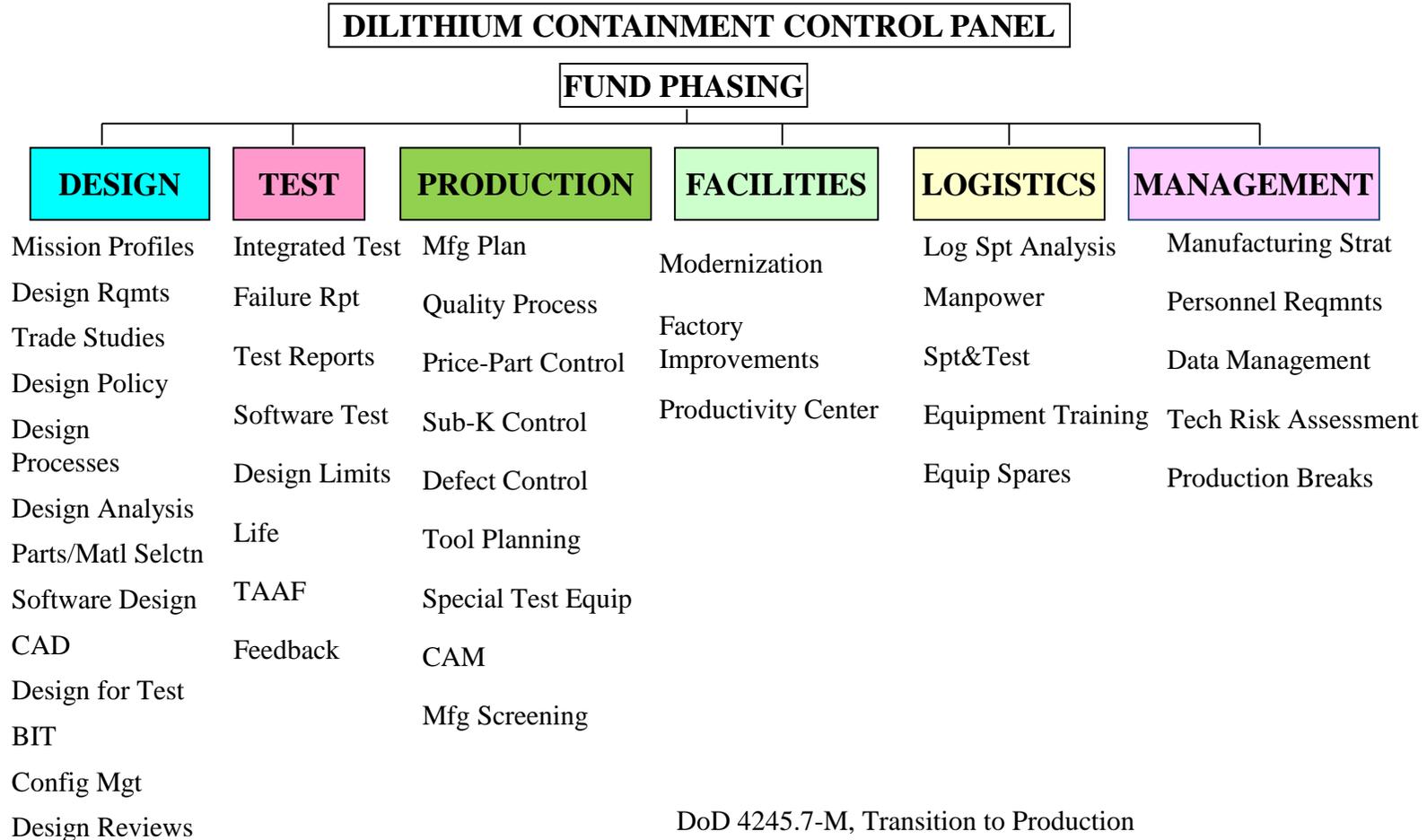


# Program Success Probability



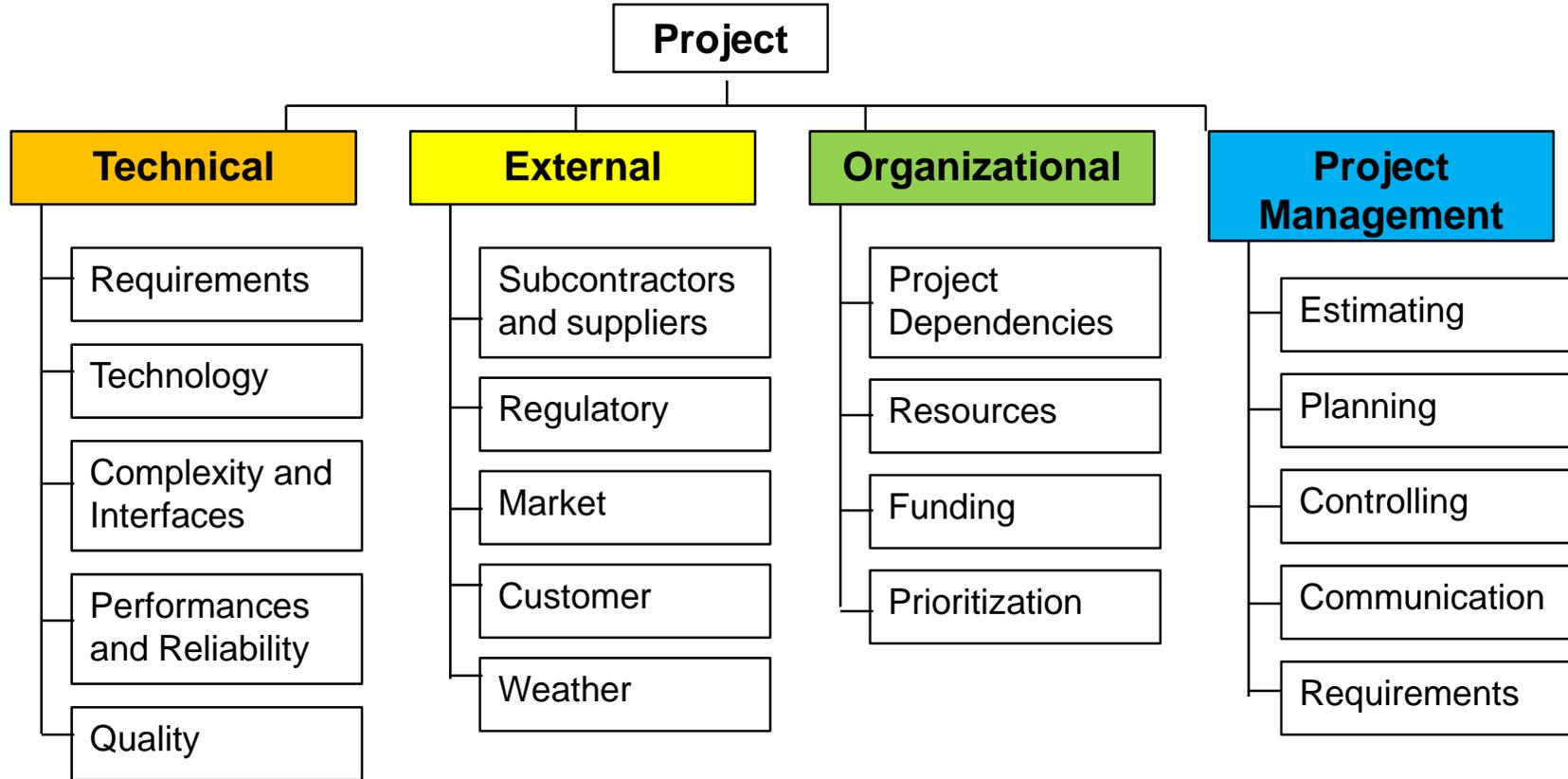


# Process Based ID



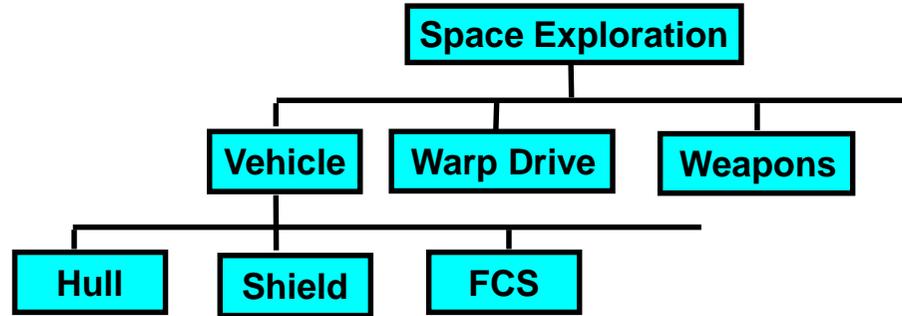


# Risk Breakdown Structure (PMBOK)





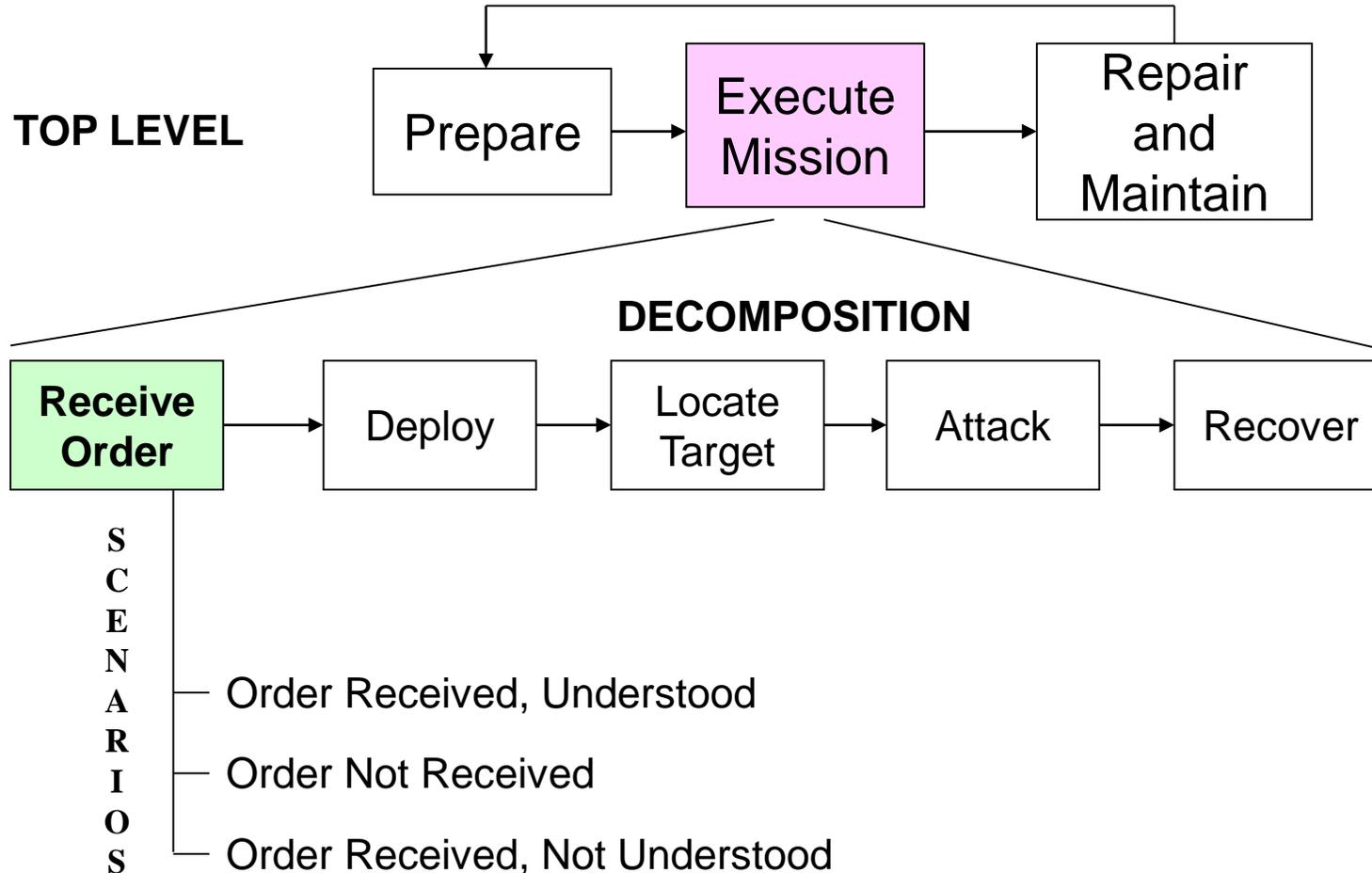
# Product Based Identification



- The WBS is an excellent basis for IPT risk assignments
- If multiple problems involve specific functional areas, a process evaluation may be in order



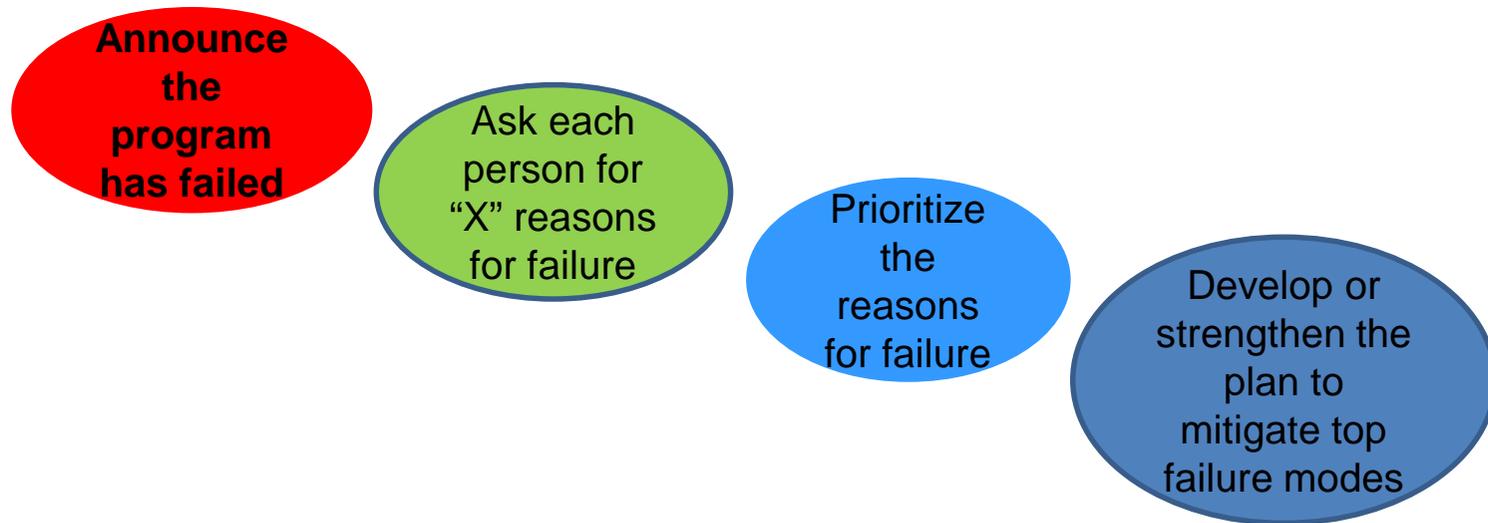
# Scenario Based ID





# PRE-MORTEM

- Set aside a couple hours
- Invite 8-10 people (your team)
- Assume a future time or period (months or years)





# Risk & Opportunity Management

## Lessons Learned

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- If you could offer one [actionable tip](#) on creating a risk and opportunity [culture](#) what would it be?



# Actually Managing Risk

- Do:
  - Make sure you do an IBR (even when the program changes)
  - Track mitigation plans in your IMS
  - Ask yourself hard questions about your biases
  - Ask your team hard questions about risk analysis results
    - Look for the “deltas” when you perform an analysis to spot trends
    - Look across multiple risks for relationships and possible process issues
  - Quantitative analysis on a recurring basis—on appropriate risks
  - When you do an analysis, report the latest news (especially bad)
    - Discuss the undiscussables
  - Consider personality preferences when assigning risk duties
    - SJ for day in / day out running of the process? Org skills?
    - NT for running review boards? Insight skills?



# Actually Managing Risk

- Don't:
  - Think only a tech person can run the process
  - Confuse risks and issues
  - Poorly define Hi, Medium, and Low risk
  - Let your Risk & Opportunity Management Plan get dusty
  - Personally do the analysis job your team is supposed to do
  - Allow just in time documentation
  - Forget all the potential sources



# Risk/Opportunity Management The Proactive Approach

**Risk/Opportunity Management  
Management**

vs.

**Crisis**



**Make your own luck**



# Some Web Sites of Interest

- **Risk Management page in the Acquisition Community Connection (ACC)**

<https://acc.dau.mil/CommunityBrowser.aspx?id=17607>

- **Risk Management Continuous Learning Module (CLM 017)**

<http://www.dau.mil/clc/>

[http://icatalog.dau.mil/onlinecatalog/courses.aspx?crs\\_id=235](http://icatalog.dau.mil/onlinecatalog/courses.aspx?crs_id=235)

- **DAU Performance Support – Targeted Training (TTM-002 Risk Management Workshop)**

[http://icatalog.dau.mil/onlinecatalog/targeted\\_training.aspx](http://icatalog.dau.mil/onlinecatalog/targeted_training.aspx)

[http://icatalog.dau.mil/onlinecatalog/courses.aspx?crs\\_id=1630](http://icatalog.dau.mil/onlinecatalog/courses.aspx?crs_id=1630)

- **New Risk Management Guide**

<http://www.acq.osd.mil/se/docs/RIO-Guide-Jun2015.pdf>

- **Program Managers Tool Kit**

<https://pmtoolkit.dau.mil/>

- **Articles**

<http://www.dau.mil/publications/DefenseATL/DATLFiles/Jan-Feb2015/Kendall.pdf>

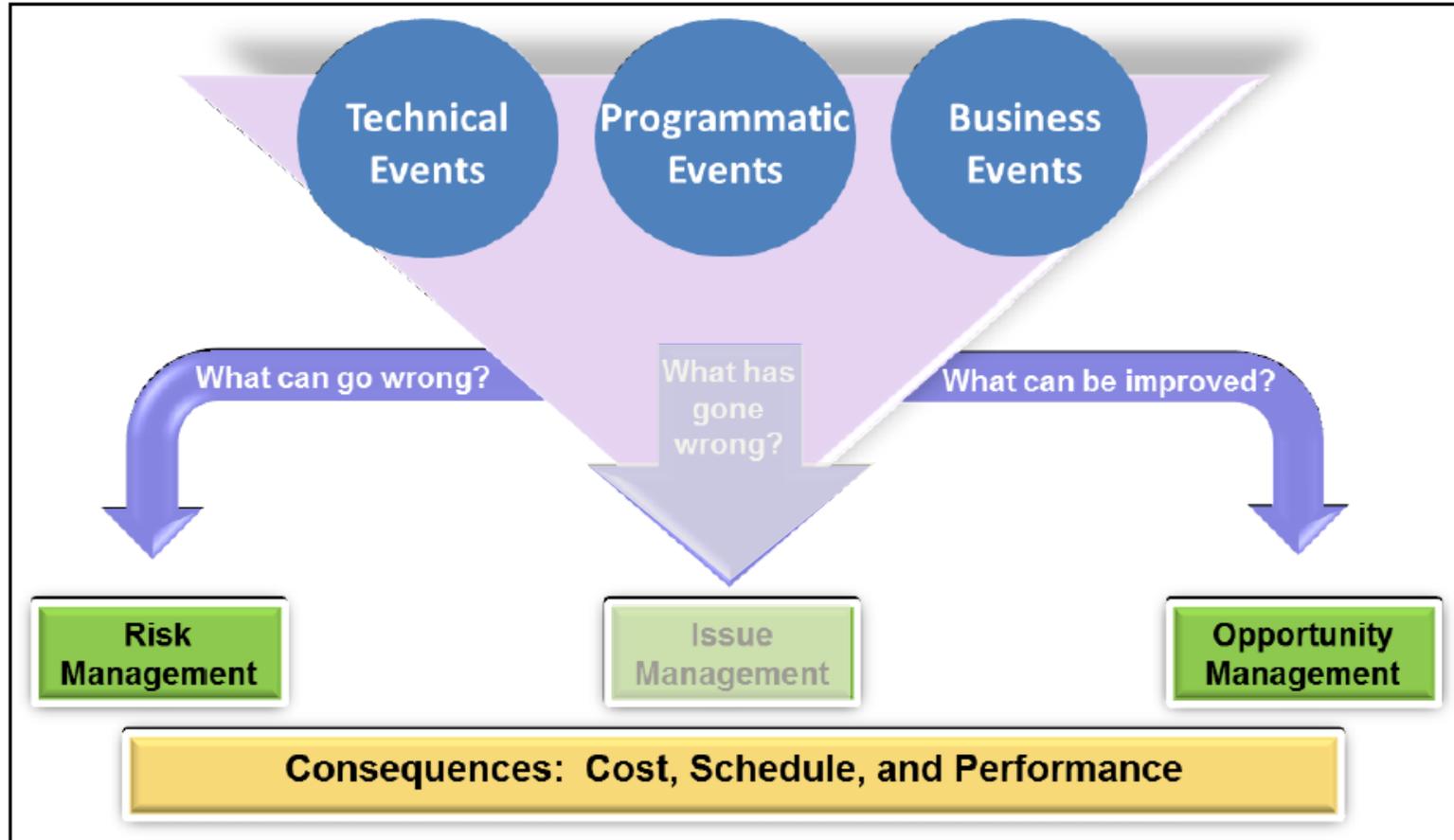
- Risk and Opportunity:
  - Mindset/Culture
  - Tools/Techniques
  - Actions



# Backup Slides



# RISK, ISSUES AND OPPORTUNITY MANAGEMENT – A COMPLETE



- From DoD Risk, Issue, and Opportunity Management Guide for Defense Acquisition Programs, Jun 2015



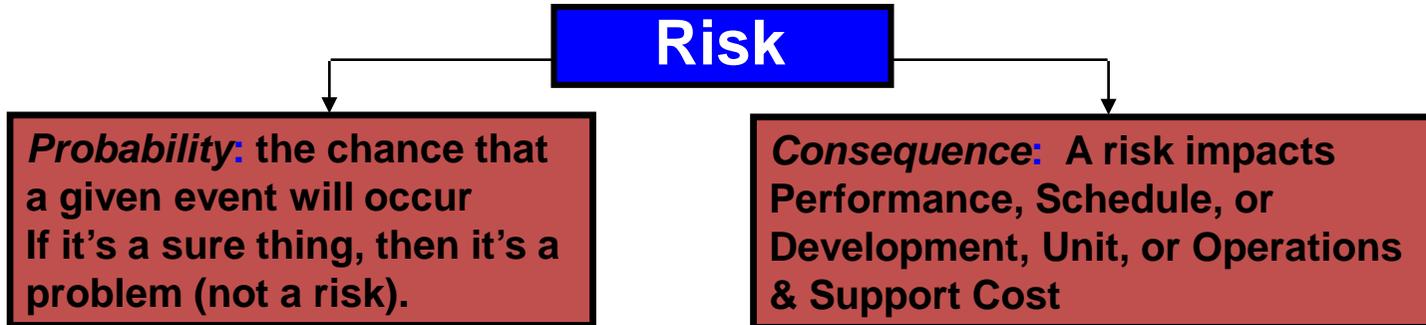
# RISK VOCABULARY

## Risk has Two Elements

- Probability
- Undesirable Consequence

## Mitigation Plan

- Plan of Actions Which Should Minimize the Risk



Understand both sides of risk



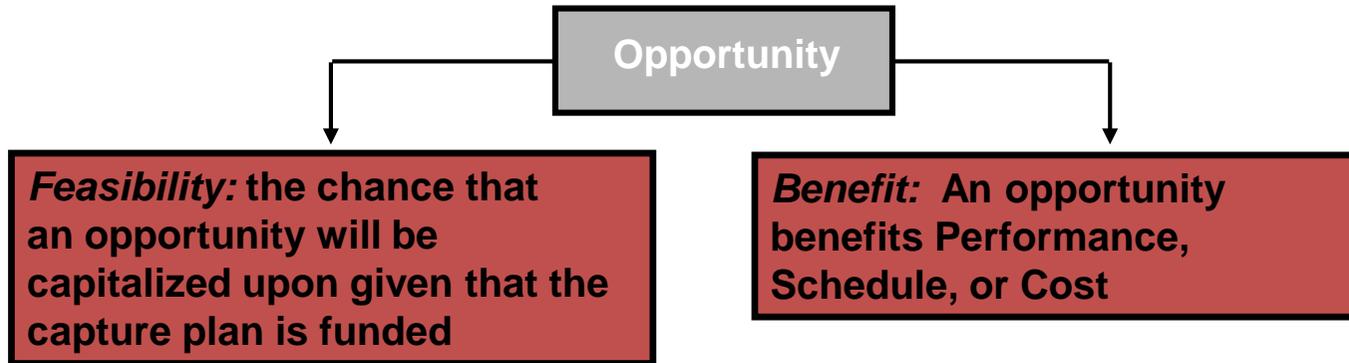
# OPPORTUNITY VOCABULARY

## Opportunity has Three Elements

- Feasibility
- Benefit
- Resources Required to Implement a Capture Plan

## Capture Plan

- Plan of Actions Which Should Capture the Opportunity



“If opportunity doesn’t knock build a door.” - Milton Berle

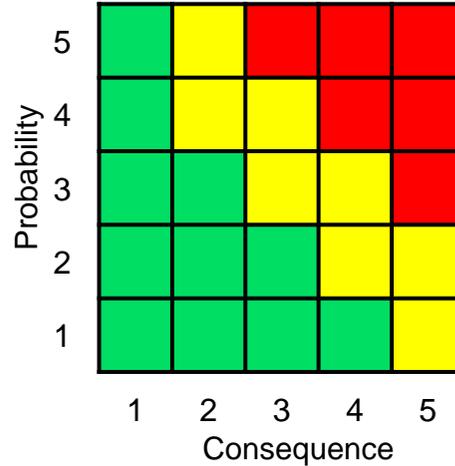
Look for and take advantage of Opportunities



# PROBABILITY AND IMPACT

(RISK CUBE OR 5 X 5)

Level	Likelihood	Probability
1	Not Likely	~10%
2	Low Likelihood	~30%
3	Likely	~50%
4	Highly Likely	~70%
5	Near Certainty	~90%



## RISK ASSESSMENT

**HIGH** - Unacceptable. Major disruption likely. Different approach required. Priority management attention required

**MODERATE** - Some disruption. Different approach may be required. Additional management attention may be needed

**LOW** - Minimum impact. Minimum oversight needed to ensure risk remains low.

Level	Technical Performance	Schedule	Cost
1	Minimal or no impact	Minimal or no impact	Minimal or no impact
2	Minor reduction in performance	<1 month schedule slip	< 1% cost increase
3	Moderate reduction in performance	1-2 months schedule slip	1-4% cost increase
4	Significant degradation in performance	3-5 month schedule slip	5-9% cost increase
5	Severe degradation in performance; will not meet key technical thresholds	≥ 6 months schedule slip	≥ 10% cost increase

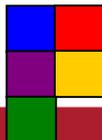


# OPPORTUNITIES & THREATS

PROBABILITY AND IMPACT MATRIX										
PROBABILITY*	THREATS					OPPORTUNITIES				
0.90	0.05	0.09	0.18	0.36	0.76	0.76	0.36	0.18	0.09	0.05
0.70	0.04	0.07	0.14	0.28	0.56	0.56	0.28	0.14	0.07	0.04
0.50	0.03	0.05	0.1	0.2	0.4	0.4	0.2	0.1	0.05	0.03
0.30	0.02	0.03	0.06	0.12	0.24	0.24	0.12	0.06	0.03	0.02
0.10	0.01	0.01	0.02	0.04	0.08	0.08	0.04	0.02	0.01	0.01
	0.05	0.10	0.20	0.40	0.80	0.80	0.40	0.20	0.10	0.05
IMPACT**										

\*Probability = Odds Of Achieving Opportunity Or Experiencing Threat

\*\*Impact = Loss From Threat Or Gain From Opportunity



Red & Blue Ratings Justify Major Investment Of Resources & Effort

Yellow & Purple Ratings Justify Secondary Consideration

Green Ratings Are Low Priority (Track But Leave Alone)



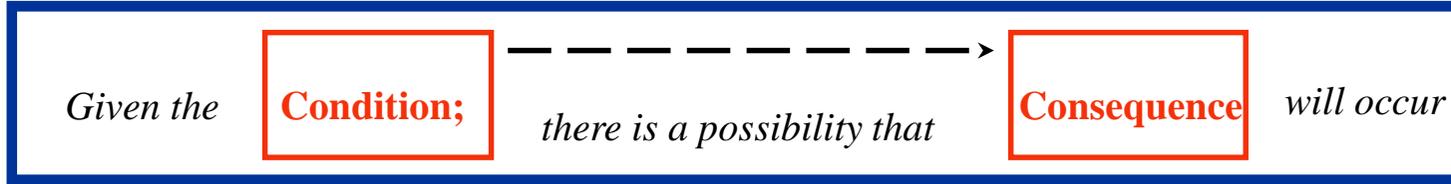
# How to write a risk statement

- 1. An IF - THEN type of risk statement.**
- 2. A CONDITION - CONSEQUENCE type of risk statement.**

**Given the “condition,” there is a likelihood that “consequence” will occur.**



# CONDITION-CONSEQUENCE STATEMENT



- **Condition**: a single phrase that identifies possible future problems, and describes current key circumstances, situations, etc., that are causing concern, doubt, anxiety, or uneasiness
- **Consequence**: a single phrase or sentence that describes the key negative outcome(s) of the current circumstances
- **EXAMPLE**: “Insufficient warning system volume output *may cause a three month delay in platform fielding.*”

# Beware! – Pseudo Risks

- **Sounds like a risk, but does not really meet the criteria of a risk (may be something to worry about)**
- **Example**
  - **The test might be six months late**
  - **The system could fail the test**
  - **We might not get the export license**

***Pseudo Risks Are Just The Expression Of The Consequence***



# Monitoring

Which tools work best for your program?

- Work Breakdown Structure (WBS)
- Risk Management Board/Opportunity Management Board
- Integrated Master Schedule
- Earned Value Management
- Cost Reporting
- Schedule Analysis
- Contract Data Items
- Technical Performance Measures
- Program/ Contractor Metrics
- Process Control Triggers



# RISK ANALYSIS COMPARISON

<b>Qualitative Analysis</b>	<b>Quantitative Analysis</b>
<ul style="list-style-type: none"><li>• Addresses individual risk descriptively</li><li>• Assesses the discrete probability of occurrence and impact on objectives if it does occur</li><li>• Prioritizes individual risks for subsequent treatment</li><li>• Adds to risk register</li><li>• Leads to quantitative risk analysis</li></ul>	<ul style="list-style-type: none"><li>• Predicts likely project outcomes based on combined effects of risks</li><li>• Uses probability distributions to characterize the risk's probability and impact</li><li>• Uses project model (e.g. schedule, cost estimate)</li><li>• Uses a quantitative method, requires specialized tools</li><li>• Estimates likelihood of meeting targets and contingency needed to achieve desired level of comfort</li><li>• Identifies risks with greatest effect on overall project risk</li></ul>



# Risk Management: Common Pitfalls

- Programs lack properly documented risk management activities
  - No Risk Management Plan that documents an organized, comprehensive and interactive strategy for managing risk
  - Lack of formal documented risk mitigation plans
    - No mitigation plans for all medium / high risks
  - Lack of off-ramps for major program risks
  - Mitigation tasks do not have resources assigned nor due dates nor the status of the task
  
- Programs lack a mature risk management program
  - Risk avoidance lessons learned are not addressed within risk management approach
  - Risk management by PMO lacks discipline, effectiveness
  - Mixing of issues and risks



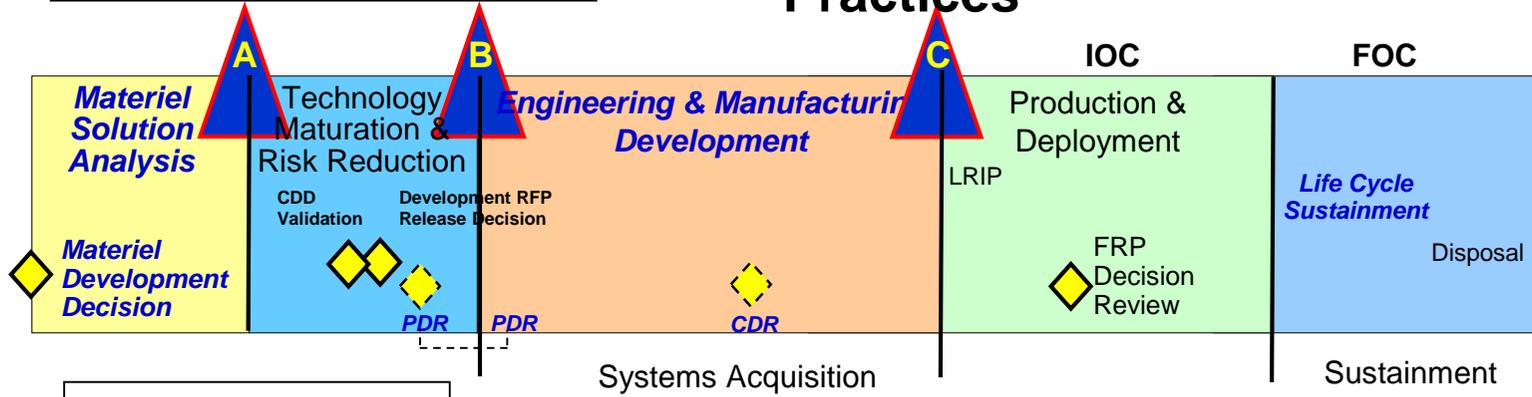
# Risk Management: Common Pitfalls

- Tools and methodology supporting risk management are not sufficient
  - Lack of evidence of linkage between TPMs/EVM/Risk Management/WBS/IMS to effectively employ them as management tools that enable risk reduction
  - Risk tool does not map risks to applicable WBS element
  - Government and contractor risk tools are not compatible
- Program management does not have a portfolio view of risk management
  - Enterprises do not have a portfolio view of risk management to prevent one program from being adversely impacted by other acquisition programs or enterprise-wide challenges
- Lack of internal training process



# DOD Acq Management System

## Comparison w/ Commercial Best Practices



### Best Practices Model

