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# ***Technology Transition Efforts to support National Security Space (NSS) Capability***

***NDIA 10<sup>th</sup> Annual DoD Tech Expo and  
Conference***

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# Integrated Technology Transition



Adv Technology Development  
6.3

Demonstration & Validation  
6.4

Engr & Mfg Development  
6.5

TRL  $\leq 5$

TRL  $\geq 7$

TRL  $\geq 9$

**Labs**  
- AFRL  
- NRL  
- DARPA  
- DOE  
- others

**Dev Prog.**  
- ATD  
- JCTD

- SBIR

Gov't \$  
SAF/ AQR  
Tech Trans  
Initiatives.

Gov't \$  
Flight Test  
STP

**Industry  
Technical  
Team  
Transition**

- IRAD Beyond  
SBIR  
- ATD Transition  
Planning

Pre-SDD Prototypes  
& Demonstrations

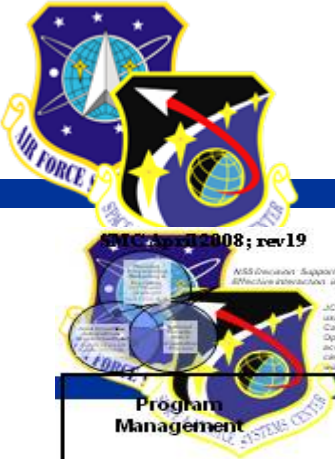
**Industry  
(Chief Engineers)**

Technology Transition & Maturation

Rqmts. Analysis & Maturation

**Build Better Transition Capabilities & Processes  
to Mitigate Technology Transition "Valley of Death"**

# DRAFT SMC/XR Horseblanket



SMC April 2008; rev 19

## Pre MS B SMC/XR DRAFT Template

Usage Note: This flow chart has been modified using information from R5960-01, OIG 5650 and other applicable documentation. For use by DCAU as a training reference, including some draft documentation, it has been tailored for that organization. Use and other organizations may follow a different modified version of what is presented here.



### Material Solution Analysis

Includes concept studies, assessments and requirements (e.g., technology development, capability development processes), showing the program solution development is mature enough to enter the formal acquisition process.

### Pre-MS A Concept Studies



Objectives: Plan and conduct an AOA to determine preferred material solution. Deliverables: Analysis of Alternatives Report (AAO) required documentation.



Objectives: Mature Technology to TRC. Deliverables: Approved System Specification and Function Baseline (PDR - Key RDR requirement that differs from DoD 5650). Planning must allow time and schedule for derivative technology development.

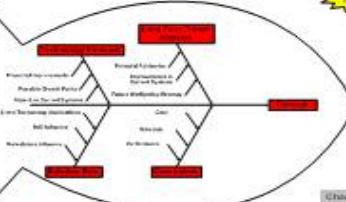
### Program Management

### Key PM Topic Areas for ICDP Preparation

Objectives: Develop & document a systems engineering process for developing pre-look material solutions. Deliverables: Systems Engineering Plan specifically tailored for pre-look material concepts.

### Solution Identification

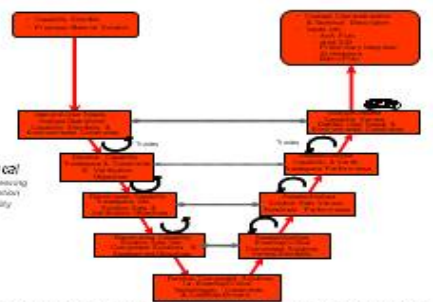
# of options reduced from 1000+ to 40-85, 4 to 3 alternatives by MS B



### Key Acronyms

Please diagnose describing major acronyms and their relationships.

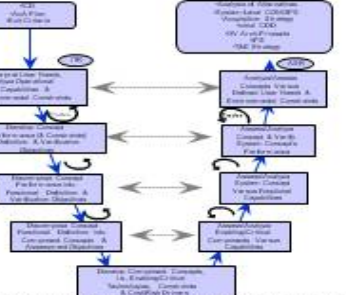
### Concept Characterization



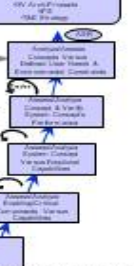
### Technical Systems Engineering

Test & Evaluation Supportability

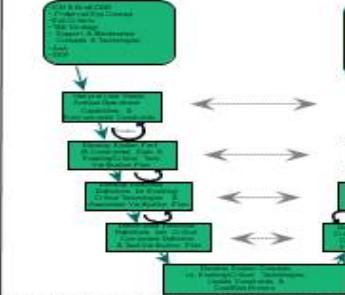
### INPUTS



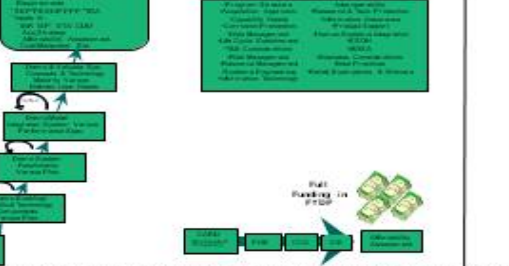
### OUTPUTS



### INPUTS



### OUTPUTS



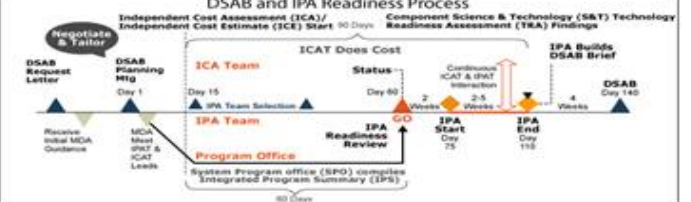
### Key Management Considerations

Key Management Considerations: Program Management, Risk Management, etc.

### Full Funding in FY08



Overview & Review Acronyms	
ADM - Acquisition Decision Memorandum	IR - Integrated DMI Review
AA - Analysis of Alternatives	ITAB - Information Technology Acquisition Board
APG - Acquisition Program DMI/line	MDA - Mission Decision Authority
CD - Concept Decision	MCSA - Modular Core System Approach
DDG - Defense Decision Board	PIP - Program Support Review
DSAB - Defense Systems Acquisition Board	PLC - Test and Evaluation
ESG - Environmental & Safety & Occupational Health	TUCM - Total Life Cycle System Management
EMV - Demand Value Management	
Cost Acronyms	
CAIR - Cost Analysis Requirements Description	POC - Program Office Costing
CC - Component Cost Management	PMO - Program Management Office
IC - Independent Cost Estimate	RTAC - Research, Develop, Test & Evaluation



### Technical & Logistic Acronyms

ASR - Alternative Systems Review	KPP - Key Performance Parameter
CGD - Capability Developer Document	RS - Milestone
CI - Configuration Item	REQM - Requirements Engineering, Safety & Occupancy Health Evaluation
COE/REP - Doctrine, Organization, Training, Personnel, Leadership & Education, Personnel and Facilities	PP - Program Protection Plan
DDAE - Development, Test & Evaluation	RFD - Reliability, Maintainability, & Supportability
DSAB - Development, Safety & Occupational Health	SEP - System Engineering Plan
ICD - Initial Capabilities Document	SRR - System Requirements Review
IPR - Independent Program Assessment	STA - System Test Assessment
IS - Independent Program Summary	SUR - System Verification Review
ISR - In-Service Review	TAE - Test & Evaluation
ISF - Information Support Plan	TBR - Test & Evaluation Master Plan
ITR - Initial Technical Review	TDS - Technology Developer Strategy
JROC - Joint Requirements Oversight Council	TRA - Technology Readiness Assessment

# Pre-MDD Concept Maturation Phase



## • SMC/XR Emphasis

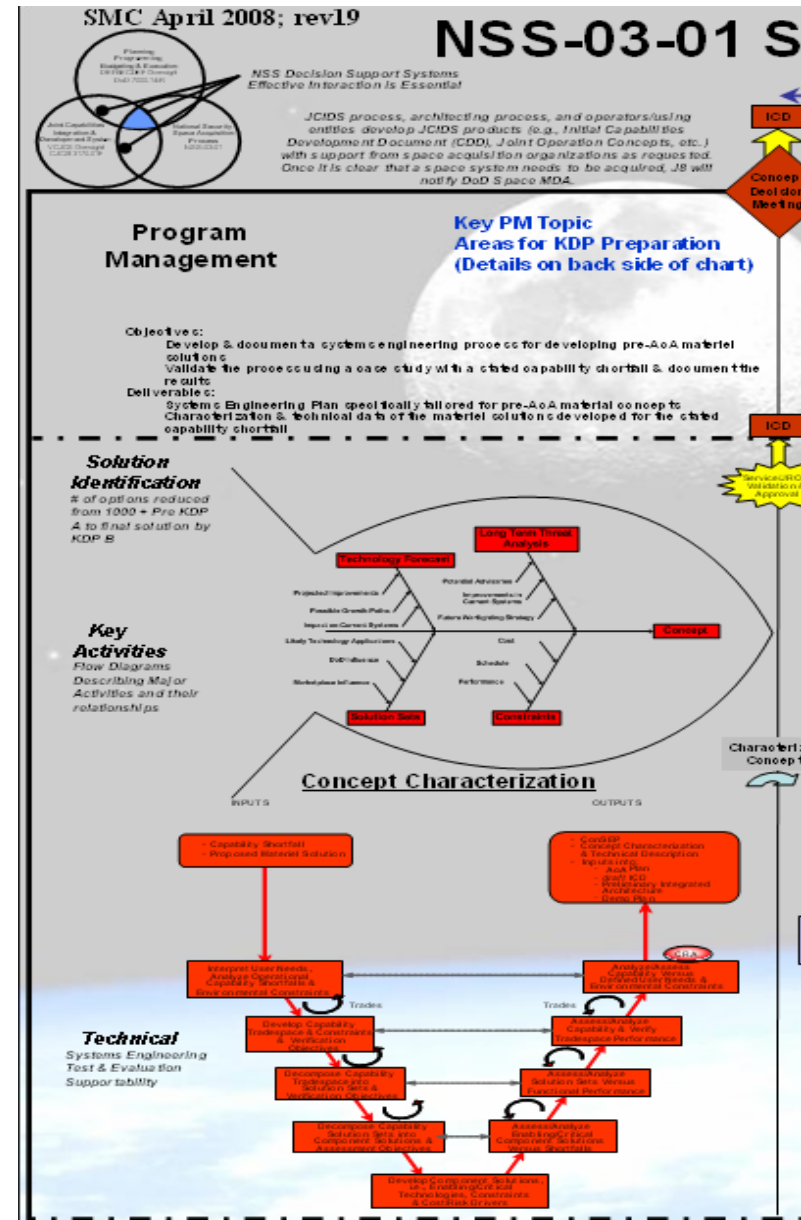
- Concept characterization elements
- Early Systems Engineering Rigor
  - SAF/AQR Pre-Acquisition Early Systems Engineering initiative
    - Led to Systems Engineering “V” for this phase
    - Signed Systems Engineering instructions/guidance

## • Potential updates to “Horse Blanket”

- Highlight concept development - Functional Solutions Analyses (FSA) linkage
- AF Policy initiative to require SAF/AQ Technical sufficiency check of CCTDs at the MDD Interface

## • Additional Considerations Lead to Metrics

- Technical sufficiency in advance of an AoA
  - Characterization of effectiveness and suitability parameters
    - Quantifiable & Testable?
  - Characterization of “relevant environment” for each concept
  - Logistics “ilities” avoid ‘unobtainium’





# UNCLASSIFIED Pre-MS B Demonstration and Prototyping

- **SMC/XR Emphasis**
  - Key PM Data Elements (cost)
  - Expansion of Concept Development into 2 phases
    - Tech Maturation and System Maturation
  - Prototyping-per Young 2007 Memo
  - DSAB and IPA Readiness Process (-B preparation)
- **Potential revisions to “Horse Blanket”**
  - Prototyping and competition policy implications
  - DoDI 5000.2 adjustments
  - Verify AFI 63-101 Acquisition and Sustainment Lifecycle Mgmt
- **Additional Considerations Lead to Metrics**
  - Early TEMP development
  - Technical performance measurement/monitoring

