



Joint Small Arms Capability Assessment Analytical Procedure

2006 National Defense Industrial Association's
Joint Services Small Arms Systems Annual Symposium

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May 16, 2006



Presentation Outline



1. JCIDS to JSACA

- (Joint Capabilities Integration and Development System to Joint Small Arms Capabilities Analysis)

2. Analysis Description for:

- a. Functional Area Analysis
- b. Functional Needs Analysis
- c. Functional Solution Analysis

3. JSACA Deliverables

4. JSACA Conclusions

5. JSACA Summary



Joint Service Small Arms Capability Assessment



Background:

- Capabilities Assessment by the JSSAP Application Working Group (AWG) to support the Joint and Individual Service Requirements Generation Process.
- Sponsored by the Joint Service Small Arms Synchronization Team
- Follows the guidelines, as appropriate, of:

Chairman of the Joint Chiefs of Staff Instruction –

CJCSI 3170.01 E (11 May 2005)

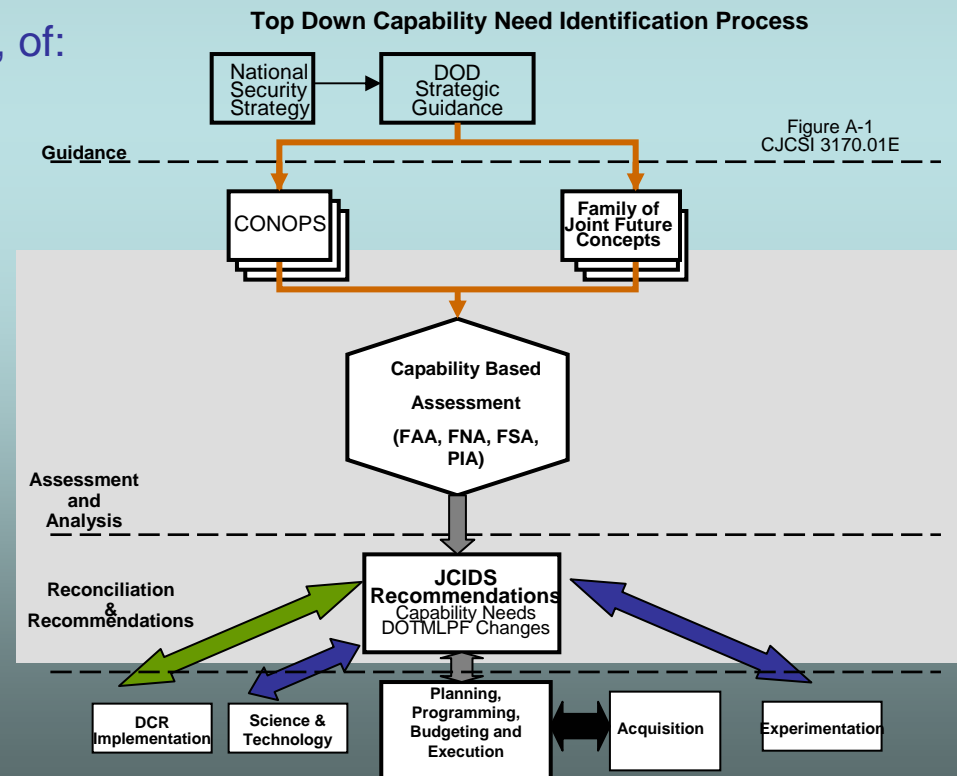
Chairman of the Joint Chiefs of Staff Manual –

CJCSM 3170.01 B (11 May 2005)

JSSAP MISSION:

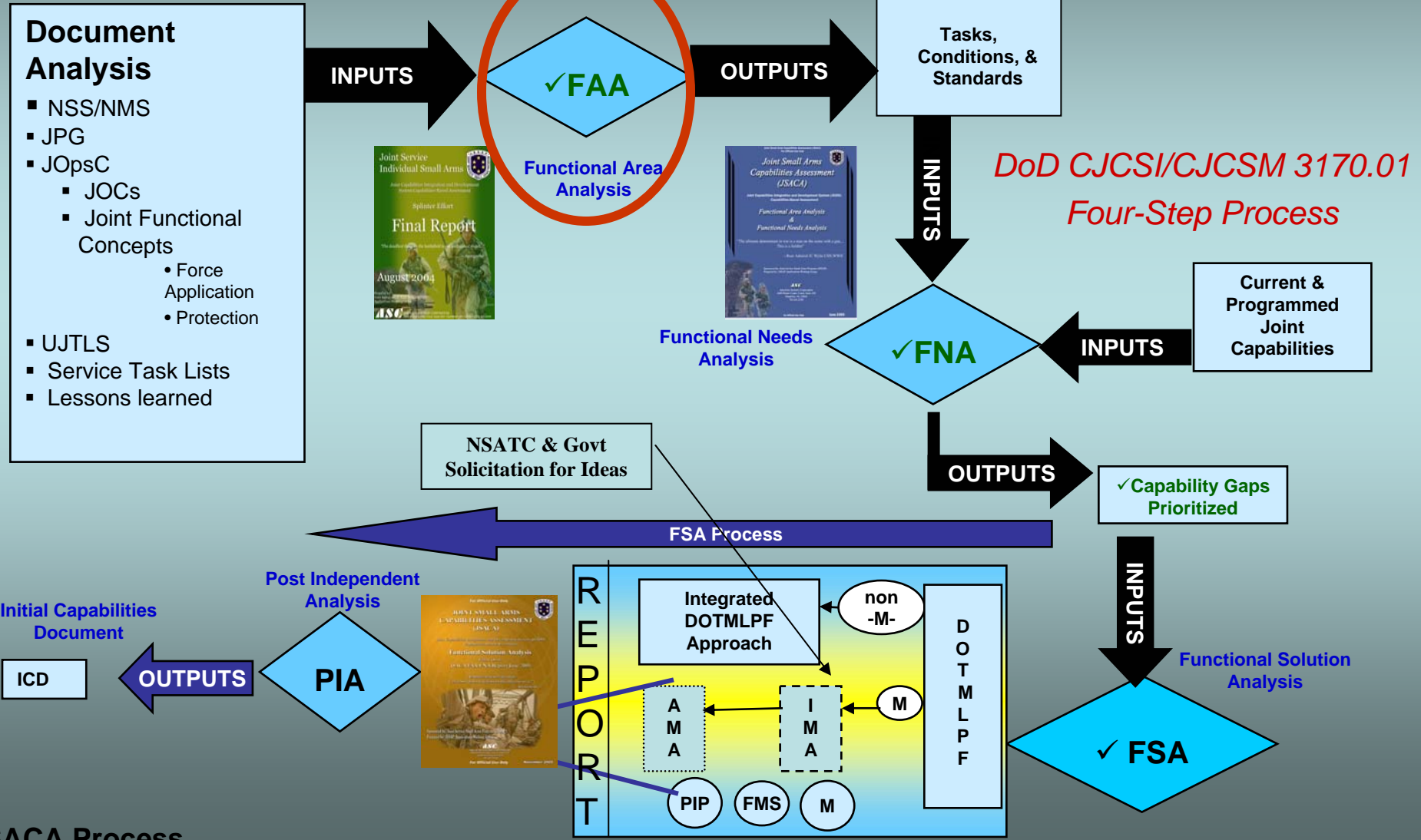
HARMONIZE REQUIREMENTS ACROSS SERVICES

1978 OSD, review 2004 Army AAE





JSACA Process





Function Area Analysis



– INPUTS

- Universal Joint Task Listing
- Service (unique) Task Listing
- Lessons Learned

➤ Analysis Tools

- ✓ Tasks provide an Activity Network structure
- ✓ Multi-Voting/Pareto technique by SME JSSAP AWG



JSACA Content Format From Functional Area Analysis



US Army

US Marine Corps

US Navy

US Air Force

US Coast Guard

SOCOM

7 Tasks of 27 Sub Tasks of 72 Gap Metrics

- Transmit & Receive
- Neutralize
- Suppress
- Breach
- Personal Defense
- Avoid Detection
- Tag & Mark

Far Term

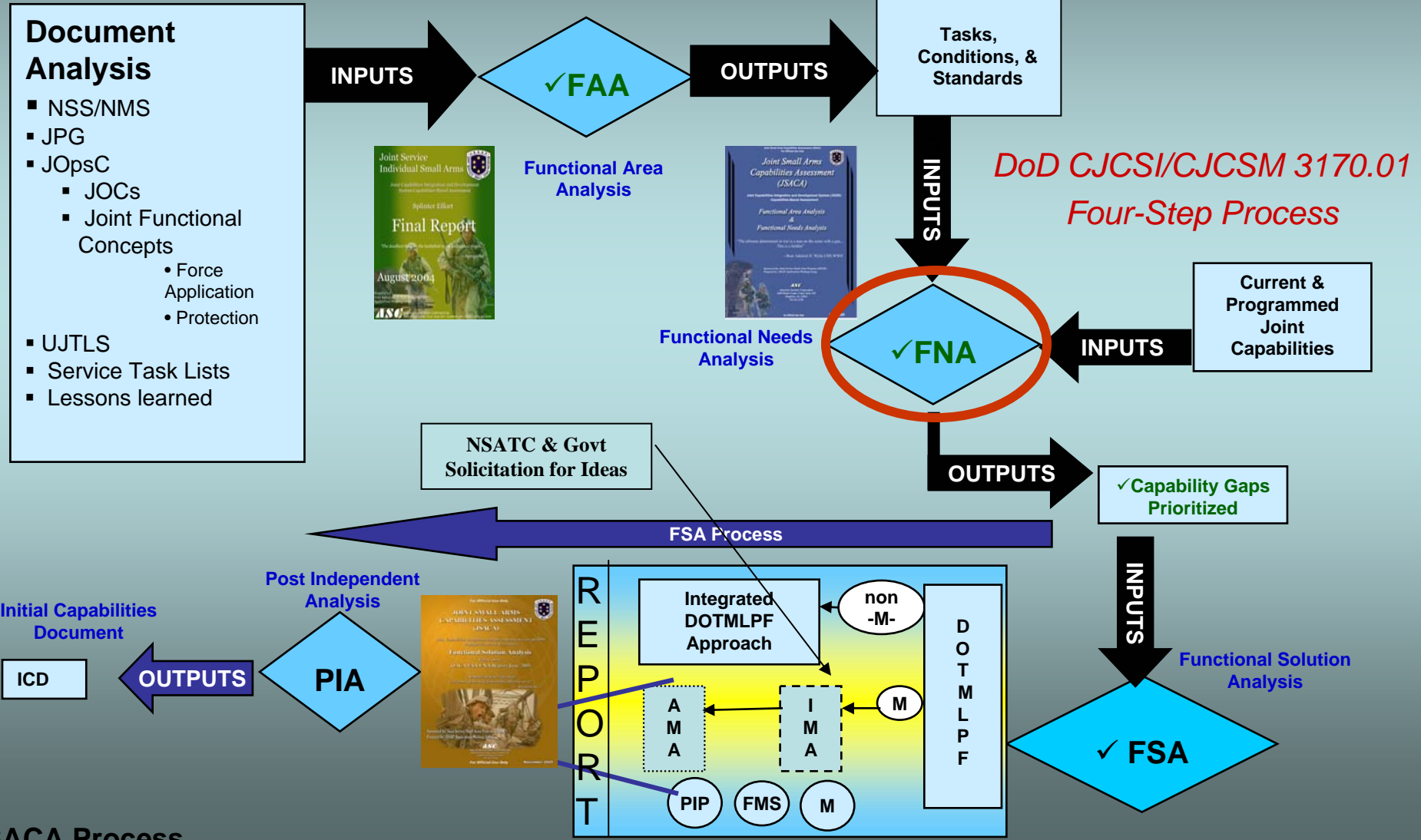
Mid Term

Near Term

Each survey respondent weights the relative importance of three Time Frames (Near, Mid and Far Term)



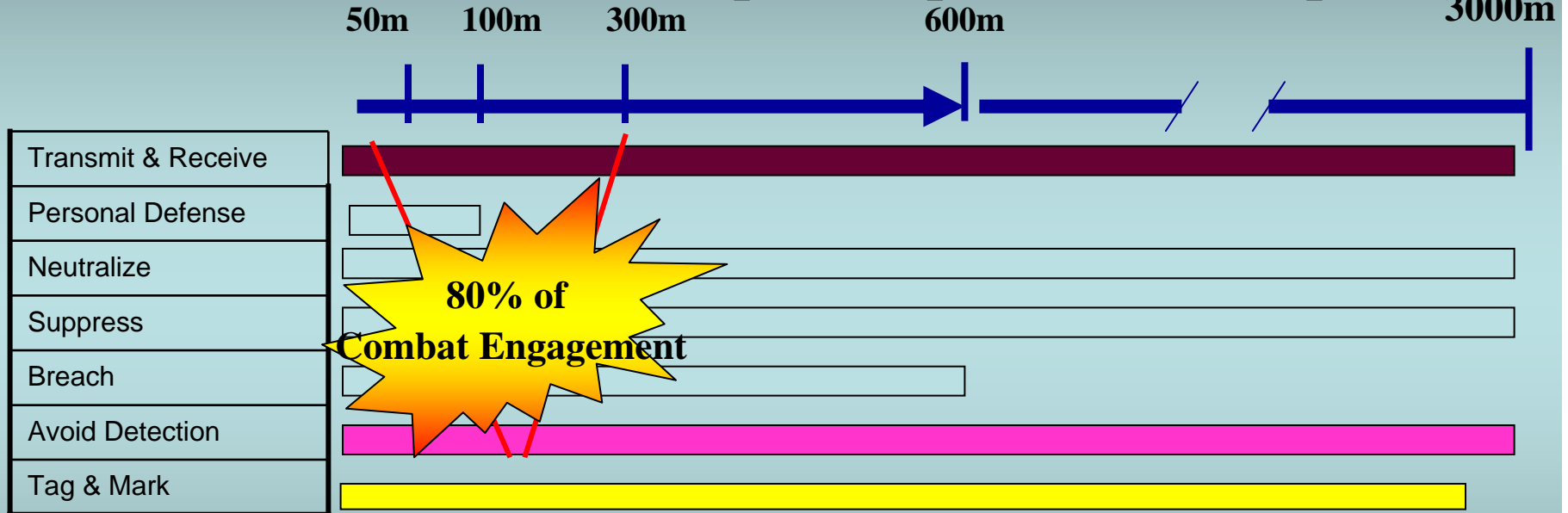
JSACA Process





Function Needs Analysis Inputs

The Gaps in Context; Battlespace Depth– Task Comparison



Conditions

- Universal... e.g., day, night, all-weather
- Shooter / Target Posture... from defilade
- Battlespace Depth: *CQB 0-50m;*
Close 0-100m; Mid 50-600m; Far 300-3000m

Standards

- Respects 3 time periods
—*near-, mid-, and far-term*
- Graduated probabilities—
e.g., Probability of 50%, 70% and 100%



Function Needs Analysis



- Analysis Tool - Check Sheet
 - Comparison of Task-Subtask/Timeframe
 - Current Capability
 - Defined Capability

NO GAP Exists

- When Current Capability $>$ Defined Capability

GAP Exists

- When Current Capability $<$ Defined Capability



JSACA Gap Priority Survey Review



How

- Gap Prioritization via JSSAP Application Working Group Survey over web
- 21 total participants
(13 Army, 4 USMC, 1 ea USN, USAF, USCG & SOCOM)
- Survey methods
 - Multi Criteria Decision Analysis (MCDA) via pair-wise rating (Analytical Hierarchy Process)
 - Ad Hoc value rating (9 highest)



Functional Needs Analysis Gap Priority Techniques



- MCDA – Multi Criteria Decision Analysis

- Pair wise comparisons in an Analytical Hierarchy Process
- The importance of one Task is compared relative to the importance of another
- Scored numerically (example below)

Transmit & Receive Data

Neutralize Target

9	8	7	6	5	4	3	2		2	3	4	5	6	7	8	9
More important								Equal		More important						

- Ad Hoc rating

- No filtered hierarchy
- Each gap evaluated on its own merit “gut-feeling” prioritization

Gap 1

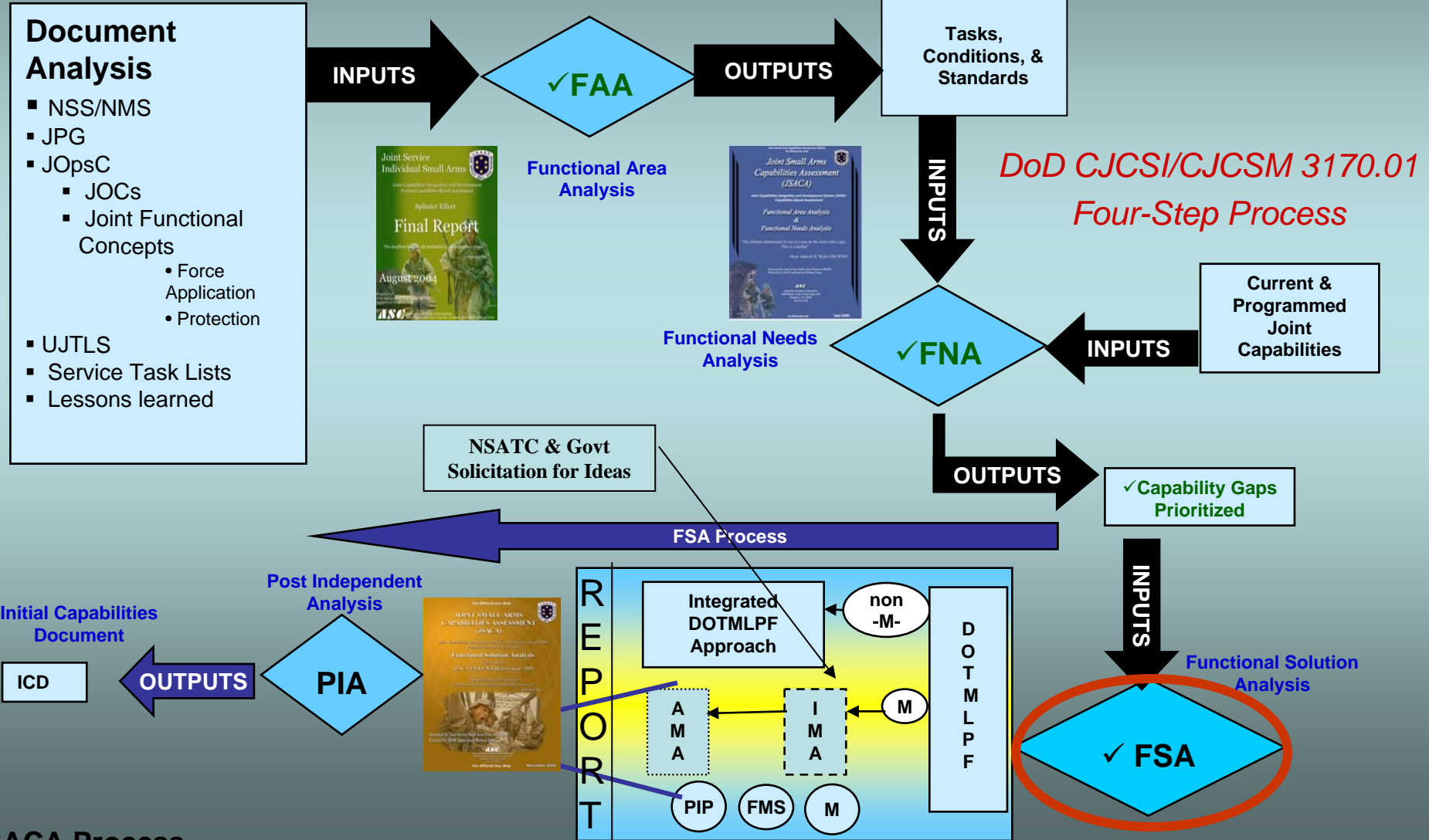


Gap 72

1	2	3	4	5	6	7	8	9
Less important					More important			
1	2	3	4	5	6	7	8	9



JSACA Process





Analysis of Materiel Approaches

General Rules



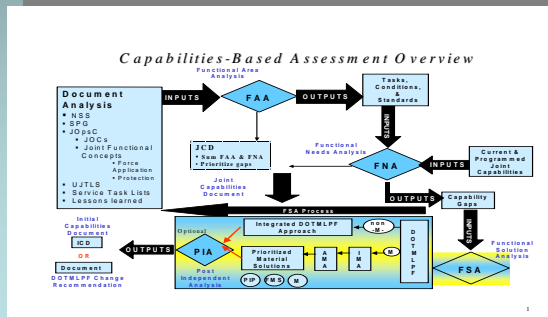
- Materiel Approaches pre-mapped and readjusted per AWG.
- Analysis Context
 - In relation to Gap Metrics (72 Gap Metrics)
 - Timeframe
 - JCIDS criteria
 - % of attainment of Gap
 - Technical Maturity (TRL)
 - Technical Risk
 - Supportability (adapted per survivability)
 - Affordability
 - Operational Risk
 - DOTLPF impacts
- FSA is an *operationally based assessment* of all potential DOTMLPF and policy approaches
- For IMA do not describe specific systems for use, rather desired capability, i.e. “UAV with a bomb”.



Analysis of Materiel Approaches

Pool of 65 Ideas

Cap Gap
Prioritization
& Metrics



Analysis of Materiel Approaches

Respect Prioritization of the Cap Gap Categories

Examine Ideas Relevant to Prioritized Cap Gap Categories

SUB-STEP ONE--ASSESSMENT

Operational Worth: Mitigation Worth and Operational Suitability

Programmatic Worth: Tech Risk, Tech Maturity, Supportability, Affordability

SUB-STEP TWO--ANALYSIS

Operational Worth and then Programmatic Worth

Comparative Analysis of Approaches

Results Presentation

14 More Ideas
For Consideration

Approaches
Of Clear Merit

Approaches
Of Significant Merit

Capability Gap Categories
With No Apparent Approaches



JSACA Change Recommendations



Deliverables

- Establishes Joint Capability Requirements
- Opportunities/Basis for Support for the following;
 - Doctrine Change Requirement
 - Initial Capabilities Documents
 - Critical Capabilities Document
 - Critical Production Document
- Provides reference to S&T investment via
 - Evolve Technology for New Soldier Weapon Systems
 - Manage and Execute the Technology Base
 - DTOs (Defense Technology Objectives)
 - ATOs Army Technology Objectives

Further focus on Ideas that effect
Functional Characteristics
Durability / Reliability / Weight/ etc.

Consider Ideas with
Potential for Increased Lethality
High Risk, really S&T ventures



JSACA Conclusions



1. *A Joint Service Harmonized document*
2. *“Guide” to Capabilities the Services desire in the future.*
3. *Defines gaps for technology base and supports acquisition activities*
4. *Requires updating periodically*

Overall Recommendation – Next Step

Staffing by executive agent – Army

**Coincident Review by All Services for Joint awareness at
Functional Control Board**



JSACA Summary



JSSAP-sponsored Analysis:

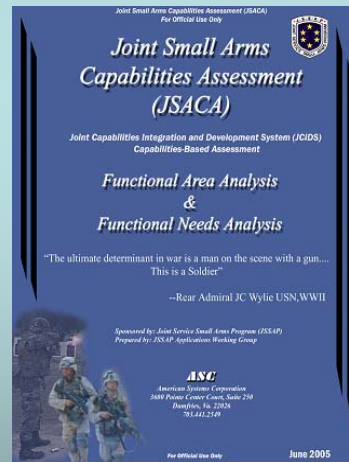
Conducted in accordance with CJCS JCIDS guidance

Products

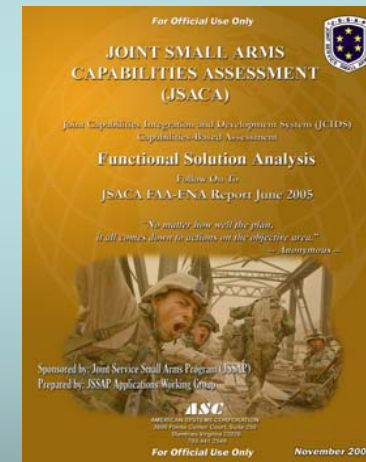
JSISA Splinter Effort



JSACA FAA & FNA



JSACA FSA



The Benefits:

Form the Basis for Future requirements

Details where investment is needed

Recommendations/Conclusion