BRAC 2005
Technical Joint Cross-Service Group (TJCSG)
Meeting Minutes of October 2, 2003

Dr. Ron Sega, Director, Defense Research and Engineering chaired this meeting. The list of attendees is attached.

Dr. James Short opened the meeting which focused on refining the TJCSG briefing to the ISG. After lengthy discussion the TJCSG agreed to the following:

- ✓ Agreeing to common definitions for functions
- ✓ Developing a simple method to calculate capacity (see hand out)
- ✓ Keeping data call questions simple and straight forward

Approved: _____
Mr. Al Shaffer
Chairman, Capabilities Integration Team

Attachments:
1. List of Attendees
2. Draft Technical JCSG Capacity Briefing to the Infrastructure Steering Group dated September 16, 2003

Technical JCSG Meeting
2 October 2003

Dr. Ron Sega, Chairman, OSD
Dr. John Foulkes, Sr. Member, ARMY
Dr. J. Dan Stewart, Sr. Member, Air Force
Mr. John Erb, Sr. Member, JCS-J4

Mr. Roger Florence, DOD-IG
Mr. Pete Potochney, OSD-BRAC
Mr. Gerald Schiefer, OSD-BRAC
Dr. Jim Short, OSD
Mr. Harold Schliesske, DDR&E
Mr. Chien Huo, ARMY TABS
BG Fred Castle, USAF
Mr. Andy Porth, OSD-BRAC
Mr. George Ryan, NAVY
Mr. Mike Crisp, DOT&E
Mr. Al Shaffer, DDR&E
COL Steve Evans, USMC
Mr. Chris Blake, Air Force
Mr. Gary Strack, Air Force
Mr. Ken Georgi, Army
Mr. Al Goldstayn, Air Force
Mr. Dave Jerome, DOT&E
Ms. Eileen Shibley, Navy
CDR James Hogan, Navy

IN PROGRESS DRAFT

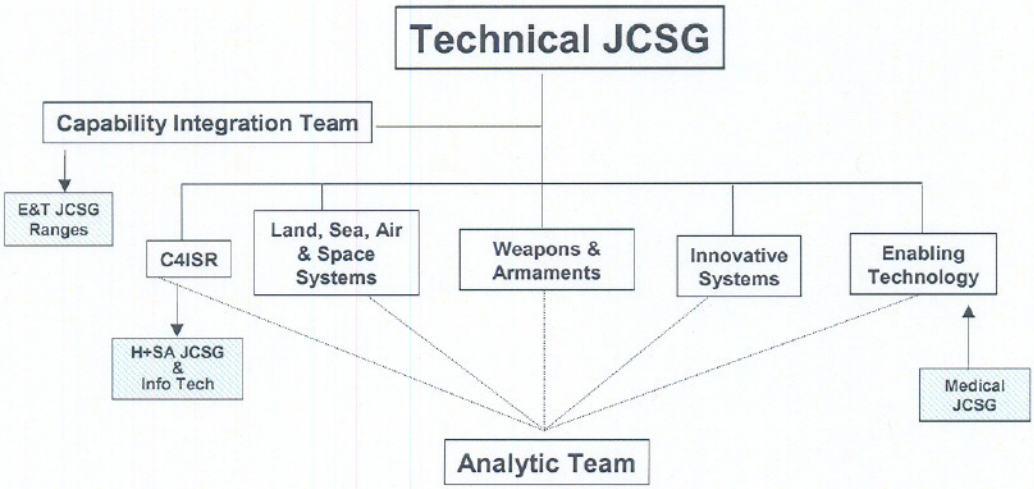
Technical JCSG Capacity Analysis

Briefing to the
Infrastructure Steering Group

Overview

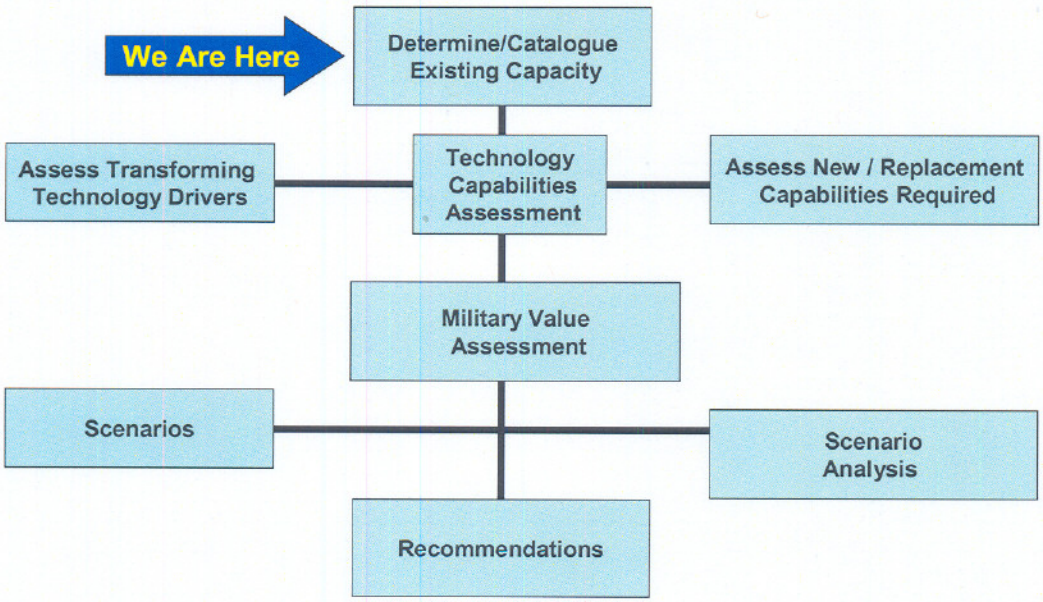
- **Organization**
- **Functions**
- **Capacity Analysis Methodology**
- **Issues Impacting Analysis**

Organization

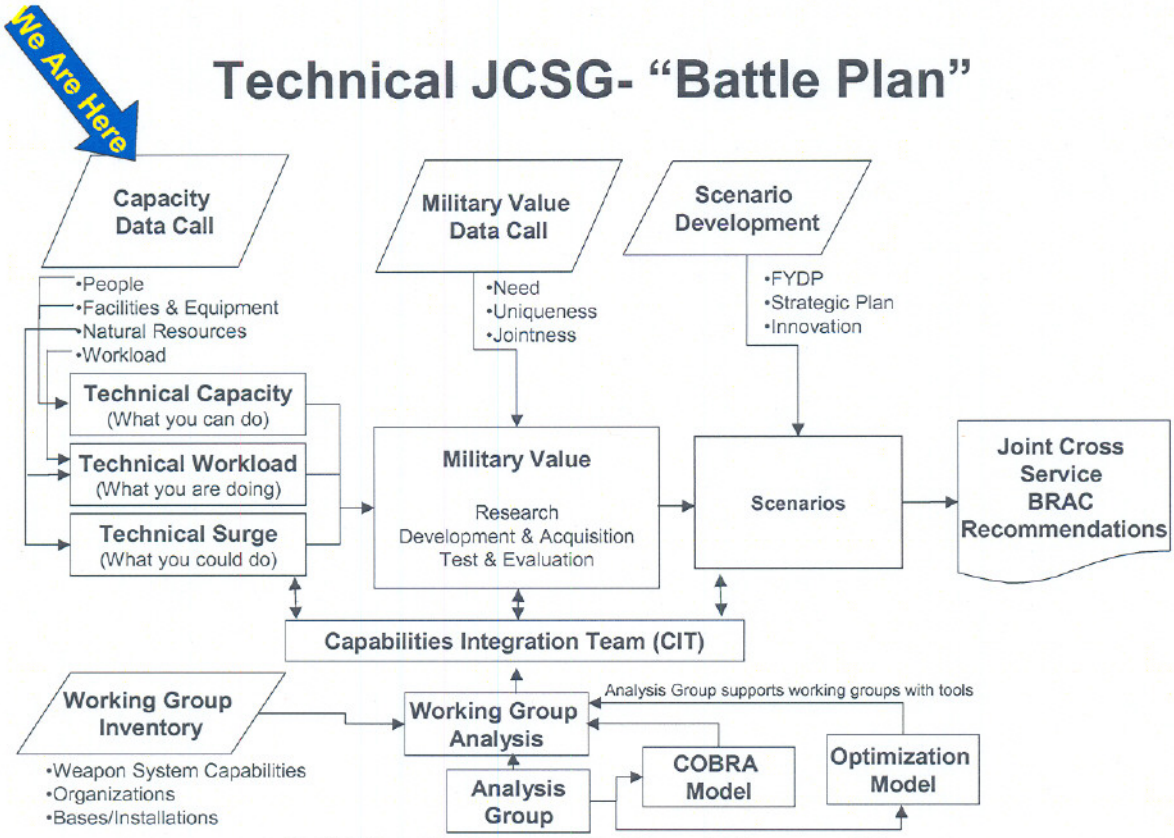


Military	Civilian	Contractor
15 (5 FTE)	70 (3 FTE)	10 (1 FTE)

Battle Plan



Technical JCSG- "Battle Plan"



Technical Functions to be Analyzed

--Slide 1 of 3--

- **Research**
  - **Basic Research**
    - ***New Science Knowledge of Interest to Military***
    - ***High University Content***
  - **Exploratory Development**
    - ***Applied Research into New Technologies***
    - ***Development of Existing Technology for Military Application***
  - **Advanced Development**
    - ***Hardware Development, Integration & Experiments***
    - ***Does Not Necessarily Lead to Procurement***

Technical Functions to be Analyzed

--Slide 2 of 3--

- **Development and Acquisition**
  - **Systems Development & Demonstration**
    - ***Efforts to Expedite Technology Transition to Military Use***
  - **System Modifications**
    - ***Improve Product Affordability, Reliability, Maintainability***
  - **Experimentation and Concept Demonstration**
    - ***Exploit Mature Technologies to Solve Military Problems***
  - **Product/In-service Life-Cycle Support**
    - ***Check-out of System after modification or upgrade***

Technical Functions to be Analyzed

--Slide 3 of 3--

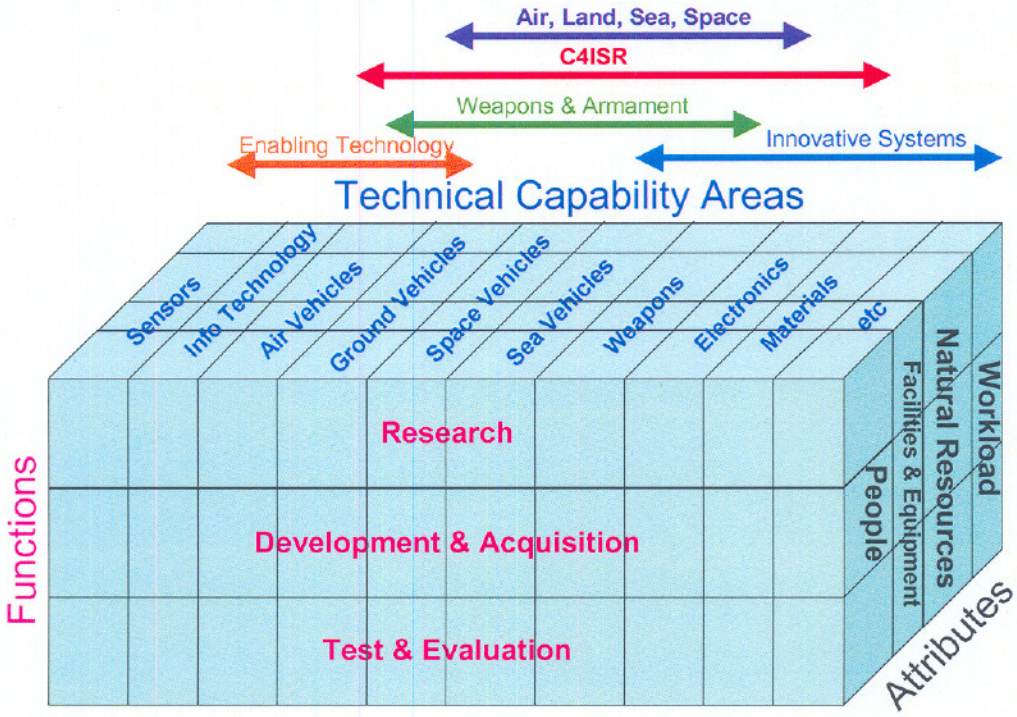
- **Test and Evaluation (supporting RD&A)**
  - **Developmental Test and Evaluation (DT&E)**
    - ***Technical Performance & Safety***
  - **Operational Test and Evaluation (OT&E)**
    - ***Effectiveness & Suitability Under Realistic Operating Conditions Including Combat***
    - ***Determine if Critical Operational Issue Have Been Satisfied to Improve Combat Operations***

Assumptions for Developing Attributes

- Technical functions (research, development and acquisition, and test and evaluation) support <u>technical capability areas</u> (each has a technical working group)
  - Air, Land, Sea & Space
  - Weapons & Armaments
  - C4ISR
  - Enabling Technolgy
  - Innovative Systems
- The Technical Working Groups identified <u>four attributes</u> common to all three functions
  - People: *Describe workforce & what they do*
  - Facilities & equipment: *What the facility has*
  - Natural Resources: *Notable Geography, Climate features & Environmental operating constraints*
  - Workload: *Current use of people, facilities & equipment*

Assumptions for Developing Attributes

- Technical Working Groups agreed to subdivide technical capability areas
  - Called technology areas
    - Sensor, information technology, electronics, materials, etc.
    - Not practical to assign technology area to just one technical capability area
- Functions analysis space
  - Functions & attributes are a 2-D analysis space
  - Technical JCSG needs a 3-D analysis space
    1. Functions (& sub functions)
    2. Attributes
    3. Technical Capability Areas (& their technology areas)



Notional Formulation

$$\text{Technical Capability} = \int_{\text{Functions}} F\,(\text{Attributes})$$

Where:

Technical Capability = F (C4ISR; Land Sea Air & Space Systems; Weapons & Armaments; Innovative Systems; Enabling Technology)

$$\int_{\text{Functions}} = \int_{\text{Test \& Evaluation}} \quad \int_{\text{Development \& Acquisition}} \quad \int_{\text{Research}}$$

Attributes = people, <u>facilities & equipment</u>, natural resources, workload

Notes:

- ***Capacity Data Call = Capture "Current" Variables***
- ***Military Value Call = Extend to "Future" Variables and Initial Weighting***
- ***Scenarios = Adjust weighting and Optimize Technical Capability***

Capacity Analysis Methodology Attribute—People

- **People:** Human/Intellectual Resources, Describe Workforce & What They Do
  - Metrics / Measuring Units
    - Number of DoD Technical & Contractors / Total Number of People by Specialty Code; Military, Civilian, Experience
    - Education & Experience / Academic Credentials, Technical Credentials & Acquisition Credentials; Professional Certificates
    - Training / Training budget; number of people enrolled in academic institutions (high school, junior college, undergraduate, graduate, professional certification)

Capacity Analysis Methodology Attribute—Facilities & Equipment

- **Facilities & equipment:** sum of what is available to the workforce
  - Metrics / Measuring Units
    - Facilities Space (Buildings, Laboratories, Offices, etc) / square Feet, % occupancy, operating hours/year
    - Commercial equipment inventory / type, number of units
    - Specialized & custom equipment inventory (e. g. anechoic chamber) / quantify special & custom features; size, weight & value
    - Utilities / kilowatt hours, cubic feet per hour, gallons per day, etc.
    - Internet & information technology / type of connectivity

Capacity Analysis Methodology Attribute—Natural Resources

- **Natural Resources:** Notable Geography & Climate Features & Environmental Operating Constraints
  - Metrics / Measuring Units
    - Geography / sq miles; Unencumbered space & population within 25, 50,100 mile radius, further
    - Climate (hot, cold, wet, dry) / days above & below a temperature, days with/without precipitation, number of days that operations are not curtailed by weather
    - Environmental / operating permits, endangered species impacting operations, EPA waivers

Capacity Analysis Methodology Attribute—Workload

- **Workload:** Current use of people, facilities & equipment
  - Metrics / Measuring Capacity
    - Funding / actual funding & actual work years; distribution by acquisition category; distribution by acquisition program; distribution by budget activity; funding from external customers
    - Tests conducted / total tests & test hours of major facilities; quantify complexity & scope of tests
    - Transitions & milestones & fielded items / total number of demonstrations moving from the laboratory to a more mature customer in the past ten years
    - International & interagency agreements / number of agreements, average project duration, number of products transitioned by either partner under any agreement

Surge Requirements

- **Technical Surge Capacity is not well defined**

- **TJSCG envisions at least two elements**
  - **Capacity to do more of what we currently do**
    a. **Capacity needed for current workload**
    b. **Maximum demonstrated (& theoretical) capacity**
       ✓ **Surge capacity = b - a**
  - **Capacity to do something technical which will revolutionize warfighting**
    - **Difficult to plan capacity for an unknown technology emerging at an unknown moment in the future**
    - **Reallocation of attributes (people; facilities & equipment; natural resources; workload)**

Surge Requirements

- **Other sources of Surge Capacity**
  - Academic sites
  - Industrial & commercial sites
  - Agencies other than DoD
  - Foreign Governments

Related JCSG Issues

- **Overlaps with other JCSG Groups**
  - No specific issues at this time
    - Ranges (Education & Training JCSG)
    - Communications & Information Tech (Headquarters and Support Agencies JCSG)
  - Concern of Medical JCSG
    - MJCSG has empowered their members to coordinate directly with the TJCSG Working Group concerning:
      - attributes
      - metrics
      - capacity questions

- **Back Up**

How Capacity Will Be Measured

- **Improve on 1995 BRAC JCSG's**
  - **Laboratory & T&E JCSG's**
  - **Similarity between questions**
    - 1995 questions are familiar to the installations
    - 2005 questions based on 1995 questions
      - Modify LJCSG and T&E JCSG questions
      - Add Acquisition questions

Issues Impacting Analysis

- **Approach to Surge Capacity**
  - TJCSG is comfortable with approach
  - Solicit constructive criticism
- **Challenge to quantify intellectual capacity**
  - Designing questions to count & quantify facilities & equipment; natural resources; workload is easier
  - Designing questions to capture and quantify intellectual capacity is harder