EXHIBIT R-2, FY2002 RDT&E,N Budget Item Justification   DATE: JUNE 2001

BUDGET ACTIVITY: 7   PROGRAM ELEMENT: 0305188N   PROJECT NUMBER: X2456
                         PROGRAM ELEMENT TITLE: Joint (C4ISR) Battle Center

(U) COST (Dollars in thousands)

PROJECT NUMBER & TITLE	FY 2000 ACTUAL	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
X2456 Joint (C4ISR) Battle Center	8,045	9,705	13,618							
TOTAL	8,045	9,705	13,618							

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Joint Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) Battle Center (JBC) is the U.S. Joint Forces Command (JFCOM) and Chairman, Joint Chiefs of Staff (CJCS) facility for warfighter exploration and assessment of C4ISR capabilities. The Center provides the combatant commands, at the Joint Task Force (JTF) level, with a near term joint assessment and experimental environment for the warfighter and technologist in support of Joint Vision 2020 (JV2020). It serves as the technical analysis and assessment agency for the Joint Requirement Operating Council (JROC) in determining C4ISR system "value-added" PRIOR to introduction to the CINCs and in advance of system fielding in operational environments. The intent is for the JBC to be a forcing function for joint synchronization and a means to foster rapid, near-term insertion of C4ISR technology.   The mission of the JBC is to provide rapid assessment of required C4ISR interoperability and warfighter utility, join emerging C4ISR technology with new operational doctrine, and result in fielding C4ISR capabilities that meet the joint warfighter's needs. The Unified Command Plan 99 (UCP 99) assigned USJFCOM with the mission of joint integration. To execute this mission and to implement the Major Focus Area for interoperability, USJFCOM is standing up a Joint Interoperability and Integration (JI&I). JI&I will provide an on-ramp to the JROC for CINC interoperability shortfalls issues. It will also develop synchronization plans to provide the warfighter with interoperable capabilities across the DOTMLP spectrum for new and legacy systems.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it provides rapid assessment of required C4ISR interoperability, as well as rapid insertion of

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emerging technology, with new operational doctrine that will result in fielding C4ISR capabilities that
meet the joint warfighter's need.

B.   (U) PROGRAM CHANGE SUMMARY:
        FY 2000: FY00 SBIR Load Jun-00 (-$105K)
                  Miscellaneous Navy adjustments (+$101K)
                  Section 8055 Proportionate Rescission (-$32K)

        FY 2001: Section 8086 .7% Pro-Rata Reduction (-$69K)
                  Interoperability Process Software Tools (+$2,000K)
                  Government-Wide Rescission: PL 106-554, Sec 1 (-$21K)

C.   (U) PROGRAM ACCOMPLISHMENTS AND PLANS:

    1. (U) FY 2000 ACCOMPLISHMENTS:

    • (U) ($1,505K) Follow-on Joint Warrior Interoperability Demonstration (JWID). Upon completion
      and evaluation of each theme year JWID the CINC's and CJTF's involved identify systems which
      demonstrated warfighting utility but which require further refinement and follow-on assessment.
      These technologies are forwarded to the JBC for inclusion in the exploitation fiscal year
      plan. Enhancements and follow-on assessments are conducted by JBC and programmatic
      recommendations are prepared. FY 00 Accomplishments: CFBL, GCCS Enhancements, Geospatial
      Information Systems.

    • (U) ($1,992K) Federated Battle Lab (FBL). The FBL is a consortium of Joint and Service battle
      centers/laboratories formed to promote solutions to operational problems in CJTF environments.
      The JBC is recognized as the joint FBL hub by CINC's, services, agencies and CJTF's. The JBC,
      as chairman of the consortium, will coordinate efforts to capitalize on lessons learned in
      order to continue these effective and successful collaborative experiments in future years. FY

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00 Accomplishments: Wireless Asynchronous Transmission Mode (ATM)(Army-Ft. Gordon Lead); Global Positioning Satellite (GPS) Interference (Navy – SPAWAR Lead); Speech Recognition (USAF-CUBE Lead); Tactical Integrated Geographic Environment (TIGRE)(Army-SMDBL Lead); Fleet Battle Experiment I.

- (U)   ($1,390K) Intelligence, Surveillance and Reconnaissance (ISR). The JBC, as written into the Joint Intelligence Interoperability Board (JIIB), will perform system integration and functional assessments of the identified intelligence systems, including shared segments, as appropriate. JBC will establish and maintain a JTF Integration Facility (JTFIF) to include current and BETA baselines of all the major Service ISR systems to support on-going maturity, operational utility, and jointness assessments of ISR systems. FY 00 Accomplishments: Data Warehousing and Data Mining, Joint Targeting Toolbox/Joint Continuous Strike Environment (JCSE), Information Dissemination Management (IDM), Joint Battle Management Integration (JBMI).

- ($1,251K) Information Assurance (IA). JBC will continue to be a key player in IA Tools integration with network management and for emerging network IA technologies. JBC will incorporate red-teaming into Joint exercises and FBL efforts in order to facilitate JBC assessments of new C4ISR IA technologies. JBC will also be looking at Information Operations Planning Tools that provide analysis, correlation, and fusion capabilities as well as greater visualization, rehearsal, and wargaming/situational analysis capabilities. FY 00 Accomplishments: Knowledge-centric Command and Control (K-C C&C), Virtual Information Center (VIC), Coalition Multi Level Security Hexagon Prototype (CMHP), JTF Network Security Management.

- (U) ($637K) MILSATCOM. JBC will be a host site for the Global Broadcast System (GBS) Test Bed/GBS Receive Suite. Included in this effort will be the installation of a GBS receive suite at the JBC and the associated program plan to move the Phase I GBS Test Bed equipment to the JBC from the Pentagon. The JBC will be involved in joint evaluation of system applications for various MILSATCOM initiatives as they are developed, thereby assuring that they will be "born joint". FY 00 Accomplishments: Global Broadcast System (GBS), Joint Communications Infrastructure Synchronization (JCIS) Bandwidth Enhancement.

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- (U) ($1,270K) Joint C4ISR Operational Architectures. The focus of Joint Operational
  Architectures is on C4ISR support to the warfighter across the "Range of Military Operations."
  The objective is to describe the doctrinally based tasks and activities, operational elements,
  and the time phased information flows required to accomplish Joint military operations. The
  architectures will be used to assess and analyze doctrine, Tactics Technics & Procedures
  (TTPs), system and procedural interoperability, processes, and synchronization issues that
  impact Joint Forces. These Operational Architectures will provide the baseline to identify
  warfighter requirements, design and structure assessments, and generate functional metrics.
  They will be developed and documented in close coordination with OSD, Joint staff, CINCs, and
  Services. FY 00 Accomplishments: Army/Navy Theater and Air Missile Defense (TAMD),
  Interoperability, Joint Collaborative Tools, Data Collection Tools, Requirements Database, CINC
  Requirements Expansion.

2. (U) FY 2001 PLAN:

- (U) ($1,549K) Follow-on JWID. Upon completion and evaluation of each theme year for JWID, the
  CINC's and CJTF's involved identify systems which demonstrated warfighting utility but which
  require further refinement and follow-on assessment. These technologies are forwarded to the
  JBC for inclusion in the exploitation fiscal year plan. Enhancements and follow-on assessments
  are conducted by JBC and programmatic recommendations are prepared.

- (U) ($1,992K) Federated Battle Lab (FBL). The FBL is a consortium of Joint and Service battle
  centers/laboratories formed to promote solutions to operational problems in CJTF environments.
  The JBC is recognized as the joint FBL hub by CINC's, services, agencies and CJTF's. The JBC,
  as chairman of the consortium, will coordinate efforts to capitalize on lessons learned in
  order to continue these effective and successful collaborative experiments in future years.

- (U) ($1,407K) Intelligence, Surveillance and Reconnaissance (ISR). The JBC, as written into
  the Joint Intelligence Interoperability Board (JIIB), will perform system integration and
  functional assessments of the identified intelligence systems, including shared segments, as
  appropriate. JBC will establish and maintain a JTF Integration Facility (JTFIF) to include

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BUDGET ACTIVITY: 7   PROGRAM ELEMENT: 0305188N   PROJECT NUMBER: X2456
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current and BETA baselines of all the major Service ISR systems to support on-going maturity, operational utility, and jointness assessments of ISR systems.

- (U) ($1,348K) Information Assurance (IA). JBC will continue to be a key player in IA Tools integration with network management and for emerging network IA technologies. JBC will incorporate red-teaming into Joint exercises and FBL efforts in order to facilitate JBC assessments of new C4ISR IA technologies. JBC will also be looking at Information Operations Planning Tools that provide analysis, correlation, and fusion capabilities as well as greater visualization, rehearsal, and wargaming/situational analysis capabilities.

- (U) ($657K) MILSATCOM. JBC will be a host site for the Global Broadcast System (GBS) Test Bed/GBS Receive Suite. Included in this effort will be the installation of a GBS receive suite at the JBC and the associated program plan to move the Phase I GBS Test Bed equipment to the JBC from the Pentagon. The JBC will be involved in joint evaluation of system applications for various MILSATCOM initiatives as they are developed, thereby assuring that they will be "Born Joint".

- (U) ($823K) Joint C4ISR Operational Architectures. The focus of Joint Operational Architectures is on C4ISR support to the warfighter across the "Range of Military Operations." The objective is to describe the doctrinally based tasks and activities, operational elements, and the time phased information flows required to accomplish Joint military operations. The architectures will be used to assess and analyze doctrine, TTPs, system and procedural interoperability, processes, and synchronization issues that impact Joint Forces. These Operational Architectures will provide the baseline to identify warfighter requirements, design and structure assessments, and generate functional metrics. They will be developed and documented in close coordination with OSD, Joint staff, CINCs, and Services.

- (U) ($1,929) Interoperability Process Software Tools. Develop, prototype, demonstrate, and package an end-to-end process and related tools for anticipating and correcting C4ISR interoperability problems as well as defining interoperability requirements for future systems.

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    This includes the building of a representative integrated architecture at the Joint Task Force
    (JTF) level to support C4ISR system interoperability evaluation.

3. (U) FY 2002 Plan:

- (U) ($1,689K) Follow-on JWID. Upon completion and evaluation of each theme year of JWID, the
  CINC's and CJTF's involved identify systems which demonstrated warfighting utility but which
  require further refinement and follow-on assessment. These technologies are forwarded to the
  JBC for inclusion in the exploitation fiscal year plan. Enhancements and follow-on assessments
  are conducted by JBC and programmatic recommendations are prepared.

- (U) ($2,068K) Federated Battle Lab (FBL). The FBL is a consortium of Joint and Service battle
  centers/laboratories formed to promote solutions to operational problems in CJTF environments.
   The JBC is recognized as the joint FBL hub by CINC's, services, agencies and CJTF's. The JBC,
  as chairman of the consortium, will coordinate efforts to capitalize on lessons learned in
  order to continue these effective and successful collaborative experiments in future years.

- (U) ($1,514K) Intelligence, Surveillance and Reconnaissance (ISR). The JBC, as written into
  the Joint Intelligence Interoperability Board (JIIB), will perform system integration and
  functional assessments of the identified intelligence systems, including shared segments, as
  appropriate. JBC will establish and maintain a JTF Integration Facility (JTFIF) to include
  current and BETA baselines of all the major Service ISR systems to support on-going maturity,
  operational utility, and jointness assessments of ISR systems.

- (U) ($1,450K) Information Assurance (IA). JBC will continue to be a key player in IA Tools
  integration with network management and for emerging network IA technologies. JBC will
  incorporate red-teaming into Joint exercises and FBL efforts in order to facilitate JBC
  assessments of new C4ISR IA technologies. JBC will also be looking at Information Operations
  Planning Tools that provide analysis, correlation, and fusion capabilities as well as greater
      visualization, rehearsal, and wargaming/situational analysis capabilities.

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- (U) ($707K) MILSATCOM. JBC will be a host site for the Global Broadcast System (GBS) Test Bed/GBS Receive Suite. Included in this effort will be the installation of a GBS receive suite at the JBC and the associated program plan to move the Phase I GBS Test Bed equipment to the JBC from the Pentagon. The JBC will be involved in joint evaluation of system applications for various MILSATCOM initiatives as they are developed, thereby assuring that they will be "Born Joint".

- (U) ($1,190K) Joint C4ISR Operational Architectures. The focus of Joint Operational Architectures is on C4ISR support to the warfighter across the "Range of Military Operations." The objective is to describe the doctrinally based tasks and activities, operational elements, and the time phased information flows required to accomplish Joint military operations. The architectures will be used to assess and analyze doctrine, TTPs, system and procedural interoperability, processes, and synchronization issues that impact Joint Forces. These Operational Architectures will provide the baseline to identify warfighter requirements, design and structure assessments, and generate functional metrics. They will be developed and documented in close coordination with OSD, Joint staff, CINCs, and Services.

- (U) Joint Integration and Interoperability (JI&I). USJFCOM will collect, consolidate and prioritize real world interoperability needs on behalf of the Joint warfighter. The JI&I will serve as a repository for these issues and will produce a single serialized and prioritized "list" of C/S/A interoperability concerns that can be attacked in a synchronized manner. This prioritized list will be provided to the JROC for endorsement. Following endorsement of the prioritized list, the JI&I will act as a routing function to recommend the best option to conduct assessments, insert technology or develop non-material solutions. FY 02 plans are identified below:

  - ($3,000K) <u>Army and Marine Corps Digitization of the Battlefield</u>: The JI&I will begin this synchronization effort by validating the requirement (developed IERs and KPPs), facilitate a MOA between Army and USMC to develop an initial digital interface between the Service systems at the Battalion level (messages), engaged the JFPO/CIPO office in SPAWAR for engineering support for the interface test plan and has engaged the Multi-Service C2 General Officer Steering Committee (MSC2GOSC) to develop a Concept of

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Operations between the systems. The JI&I will coordinate and synchronize efforts as the material interface is developed and tested leading to a JDEP demonstration and validate the CONOPS/TTP during an ASCIET field exercise.

- ($2,000K) <u>Collaborative Planning Tools</u>: The JI&I will leverage this initial work by DISA and JBC and coordinate the selection/recommendation of a single joint solution or a set of tools that can be made interoperable through software development or use of commercial products. JI&I will coordinate getting the collaborative tools into joint venues to demonstrate/test their capabilities.

C. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in thousands)

	FY 2000 ACTUAL	FY 2001 ACTUAL	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
(U) OMN 1C6C	11,998	12,310	12,716							

D. (U) ACQUISITION STRATEGY

- FY 2000-3. The JBC does not have a major contract for its RDT&E efforts. Equipments that are required to support our various projects are either bought from other service contracts and/or from the GSA schedule. Services are provided by other services and/or various vendors with expertise on a specific assessment we are accomplishing.

Exhibit R-2, RDT&E,N Budget Item Justification

EXHIBIT R-3, FY 2002 RDT&E,N PROJECT COST ANALYSIS   DATE: JUNE 2001

BUDGET ACTIVITY: 7   PROGRAM ELEMENT: 0305188N
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Exhibit R-3 Cost Analysis (page 1)												Date: MAY 2001	
APPROPRIATION/BUDGET ACTIVITY 1319/BA 7			PROGRAM ELEMENT: 0305188N								PROJECT NAME AND NUMBER: JBC/X2456		
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Dev Support Equip Acquisition	MIPR	GSA Schedule	617	392	Var	660	Var					
Systems Engineering	C-CPFF	S. Carolina Res.		1900	5/01							
Systems Engineering	C-CPFF	ODU	255	132	11/00	421	10/01					
Government Engineering Supt	C-CPFF	General Dynamics	450	596	4/01	641	11/01					
Contractor Engineering Supt	C-CPFF	SAIC		0		121	11/01					
Government Engineering Supt	MIPR	Various DoD	1592	612	Var	1158	Var					
Travel	N/A	N/A		67	Var	123	Var					
Subtotal ProductDevelopment			2914	3699		3124						
Remarks:												
Systems Engineering	C-CPFF	ODU	206	106	11/00	429	10/01					
Contractor Engineering Supt	C-CPFF	General Dynamics	579	433	4/01	466	11/01					
Contractor Engineering Supt	C-CPFF	SAIC				180	11/01					
Government Engineering Supt	MIPR	Various DoD	1489	665	Var	972	Var					
Travel	N/A	N/A		50	Var	86	Var					

Exhibit R-3, Project Cost Analysis

EXHIBIT R-3, FY 2002 RDT&E,N PROJECT COST ANALYSIS   DATE: JUNE 2001

BUDGET ACTIVITY: 7   PROGRAM ELEMENT: 0305188N
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Subtotal Support			2274	1254		2133					

Remarks

Exhibit R-3, Project Cost Analysis

EXHIBIT R-3, FY 2002 RDT&E,N PROJECT COST ANALYSIS   DATE: JUNE 2001

BUDGET ACTIVITY: 7   PROGRAM ELEMENT: 0305188N
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| Exhibit R-3 Cost Analysis (page 2) | | | | | | | | | | | | Date: MAY 2001 | |
| APPROPRIATION/BUDGET ACTIVITY: 1319/BA 7 | | | PROGRAM ELEMENT: 0305188 | | | | | | | PROJECT NAME AND NUMBER: JBC/X2456 | | | |
Cost Categories	Contract Method & Type	Performing Activity & Location	Total Pys Cost 99/00	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Dev Support Equipment Acq	MIPR	GSA Schedule	1119	770	Var	1336	Var					
Systems Engineering	C-CPFF	ODU	480	246	11/00	728	10/01					
Systems Engineering	C-CPFF	MITRE	130	396	11/00	426	10/01					
Systems Engineering	C-CPFF	Anzus, Inc				458	10/01					
Contractor Engineering Supt	C-CPFF	General Dynam	1175	1679	4/00	1806	11/01					
Contractor Engineering Supt	C-CPFF	SAIC				568	10/01					
Government Engineering Support	MIPR	Various DoD	5096	1472	Var	2714	Var					
Travel (T&E)	N/A	N/A		189	Var	325	Var					
Subtotal T&E			8000	4752		8361						
Subtotal Management												

Exhibit R-3, Project Cost Analysis

EXHIBIT R-3, FY 2002 RDT&E,N PROJECT COST ANALYSIS   DATE: JUNE 2001

BUDGET ACTIVITY: 7   PROGRAM ELEMENT: 0305188N
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Remarks											
Total Cost			13188	9705		13618					
Remarks											