

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification					DATE: February 2004				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT (PE) NAME AND NO.							
RDT&E, N /BA-4 Demonstration/Validation		0603635M Marine Corps Ground Combat/Supporting Arms Systems							
COST (\$ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	31.622	26.009	22.440	13.674	4.986	2.837	2.876	Cont	Cont
C1964 Anti-Armor Weapon System	1.117	0.754	0.493	0.497	0.500	0.516	0.525	Cont	Cont
C2112 Lightweight 155mm Howitzer (LW155)	13.097	5.763	0.000	0.000	0.000	0.000	0.000	0.000	18.860
C2256 Integrated Infantry Combat System	0.397	1.664	1.681	1.566	1.594	1.644	1.679	Cont	Cont
C2507 Family of Small Craft	0.606	1.065	0.001	0.001	0.000	0.000	0.000	0.000	1.673
C2508 Internally Transportable Vehicle (ITV)	2.063	0.000	5.715	0.003	0.000	0.000	0.000	0.000	7.781
C2614 SMAW Follow-On	10.510	10.236	14.550	11.607	2.892	0.677	0.672	0.000	51.144
C2998 Innovative Stand-Off Door Breaching Munition	2.390	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.390
C9116 Nanoparticles Neutralization of Facility Threats	1.442	6.527	0.000	0.000	0.000	0.000	0.000	0.000	7.969
Quantity of RDT&E Articles									
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:									
This PE supports the demonstration and validation of Marine Corps Ground/Supporting Arms Systems for utilization in Marine Air-Ground Expeditionary Force amphibious operations.									
This program is funded under DEMONSTRATION & VALIDATION because it develops and integrates hardware for experimental test related to specific ground weapon system.									

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2004																																									
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-4 Demonstration/Validation		PROGRAM ELEMENT (PE) NAME AND NO. 0603635M Marine Corps Ground Combat/Supporting Arms Systems																																									
<p>B. PROGRAM CHANGE SUMMARY</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;"></th> <th style="width: 15%; text-align: right;">FY2003</th> <th style="width: 15%; text-align: right;">FY2004</th> <th style="width: 15%; text-align: right;">FY2005</th> </tr> </thead> <tbody> <tr> <td>(U) FY 2004 President's Budget:</td> <td style="text-align: right;">31.059</td> <td style="text-align: right;">19.700</td> <td style="text-align: right;">20.612</td> </tr> <tr> <td colspan="4">(U) Adjustments from the President's Budget:</td> </tr> <tr> <td colspan="4"> (U) Congressional/OSD Program Reductions</td> </tr> <tr> <td colspan="4"> (U) Congressional Rescissions</td> </tr> <tr> <td colspan="4"> (U) Congressional Increases</td> </tr> <tr> <td> (U) Reprogrammings</td> <td style="text-align: right;">0.598</td> <td style="text-align: right;">6.000</td> <td style="text-align: right;">3.947</td> </tr> <tr> <td> (U) SBIR/STTR Transfer</td> <td style="text-align: right;">-0.085</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td> (U) Minor Affordability Adjustment</td> <td style="text-align: right;">0.050</td> <td style="text-align: right;">0.309</td> <td style="text-align: right;">-2.119</td> </tr> <tr> <td>(U) FY 2005 President's Budget:</td> <td style="text-align: right;">31.622</td> <td style="text-align: right;">26.009</td> <td style="text-align: right;">22.440</td> </tr> </tbody> </table> <p style="margin-top: 20px;">CHANGE SUMMARY EXPLANATION:</p> <p> (U) Funding: See Above. (See R-2a exhibits for breakout at project level).</p> <p> (U) Schedule:</p> <p> (U) Technical:</p>					FY2003	FY2004	FY2005	(U) FY 2004 President's Budget:	31.059	19.700	20.612	(U) Adjustments from the President's Budget:				(U) Congressional/OSD Program Reductions				(U) Congressional Rescissions				(U) Congressional Increases				(U) Reprogrammings	0.598	6.000	3.947	(U) SBIR/STTR Transfer	-0.085	0.000	0.000	(U) Minor Affordability Adjustment	0.050	0.309	-2.119	(U) FY 2005 President's Budget:	31.622	26.009	22.440
	FY2003	FY2004	FY2005																																								
(U) FY 2004 President's Budget:	31.059	19.700	20.612																																								
(U) Adjustments from the President's Budget:																																											
(U) Congressional/OSD Program Reductions																																											
(U) Congressional Rescissions																																											
(U) Congressional Increases																																											
(U) Reprogrammings	0.598	6.000	3.947																																								
(U) SBIR/STTR Transfer	-0.085	0.000	0.000																																								
(U) Minor Affordability Adjustment	0.050	0.309	-2.119																																								
(U) FY 2005 President's Budget:	31.622	26.009	22.440																																								

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2004			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME			
RDT&E, N /BA-4 Advanced Component Dev & Prototypes (ADCP&P)		0603635M Marine Corps Ground Combat/Supt Arms				C1964 Anti-Armor Weapon System			
COST (\$ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	1.117	0.754	0.493	0.497	0.500	0.516	0.525	Cont	Cont
RDT&E Articles Qty									

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:
 (U) This project provides for Marine Corps participation in the Joint Anti-Armor Program entitled Javelin (Advanced Anti-Tank Weapon System - Medium (AAWS-M)) and the Anti-Armor Weapon System - Heavy (AAWS-H). The Javelin weapon system Pre-Planned Product Improvement (P3I) program will provide the Marine Corps and Army with state-of-the-art capability to destroy sophisticated and future armored threats. The AAWS-H is a long range, antitank weapon system that will replace the Tube Launched, Optically Tracked, Wire Guided (TOW) Missile System. It will satisfy an operational requirement to provide increased range (4000 meters), increased lethality against all armored threats, to include explosive reactive armor, active protection, increased probability of hit and kill and increased gunner survivability. Possible Light Armored Vehicle-Anti Tank usage would promote commonality among Marine Corps systems.

(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:

COST (\$ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.234	0.000	0.000
RDT&E Articles Qty			

Engineering/technical support to participate in technical developments in the Javelin program.

COST (\$ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.351	0.366	0.304
RDT&E Articles Qty			

Engineering/technical support to participate in technical developments in the AAWS-H program.

COST (\$ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.236	0.189	0.189
RDT&E Articles Qty			

Program Office support for the AAWS-H program.

COST (\$ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.000	0.199	0.000
RDT&E Articles Qty			

Conduct evaluation of Analysis of Alternatives (AOA) identified AAWS-H solution.

COST (\$ in Millions)	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.296	0.000	0.000
RDT&E Articles Qty			

Conduct Weapons System Explosive Safety Review Board (WSESRB) Insensitive Munitions (IM) support.

(U)Total \$	1.117	0.754	0.493
-------------	-------	-------	-------

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2004			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME			
RDT&E, N /BA-4 Advanced Component Dev & Prototypes (ADCP&P)			0603635M Marine Corps Ground Combat/Supt Arms			C1964 Anti-Armor Weapon System			
(U) Project Change Summary:			<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>				
(U) FY2004 President's Budget:			0.868	0.762	0.498				
(U) Adjustments to Previous President's Budget:									
(U) Congressional Program Reductions									
(U) Congressional Rescissions									
(U) Congressional Increases									
(U) Reprogrammings									
(U) SBIR/STTR Transfer									
(U) Minor Affordability Adjustment			-0.006	-0.008	-0.005				
(U) FY2005 President's Budget:			1.117	0.754	0.493				
CHANGE SUMMARY EXPLANATION:									
(U) Funding: See Above.									
(U) Schedule: Not Applicable.									
(U) Technical: Not Applicable.									
(U) C. OTHER PROGRAM FUNDING SUMMARY:									
Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
(U) PMC BLI# 301100 JAVELIN	1.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.012
(U) PMC BLI# 312300 MISSILE MODIFICATIONS	49.317	0.583	0.595	27.524	40.510	24.236	0.001	0.000	142.766
(U) Related RDT&E: Not Applicable.									
(U) D. ACQUISITION STRATEGY:									
AAWS-H - The acquisition strategy anticipates a Competitively Awarded Cost Plus Development Contract with follow-on Firm Fixed Price Production Contract. JAVELIN - Acquisition strategy provides for pre-planned improvements for the Javelin hardware which is procured under a Firm Fixed Price Multi-Year Contract. The first Multi-Year covers FY 97 through FY 99. Hardware on this contract includes the Command Launch Unit (CLU), Tactical Round, Battery Unit, Basic Skills Trainer, and Field Tactical Trainer. The second Multi-Year covers the fiscal years 2000-2003.									
(U) E. MAJOR PERFORMERS:									
FY 02 to completion - NSWC Dahlgren, VA. Engineering and technical support.									
FY 04 - TBD. Evaluation of AAWS-H solution.									

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2004																																																			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME																																																			
RDT&E, N /BA-4 Advanced Component Dev & Prototypes (ADCP&0603635M Marine Corps Ground Combat/Supt Arms		C2256 Integrated Infantry Combat System (IICS)																																																							
COST (\$ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program																																																
Project Cost	0.397	1.664	1.681	1.566	1.594	1.644	1.679	Cont	Cont																																																
RDT&E Articles Qty																																																									
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>(U) The program will enhance the Marine Rifle Squad's battlefield capabilities through the development, optimization, and integration of an assortment of Marine systems/components and technologies into a cohesive, timely and combat effective system. These systems/components include weapons, integrated helmet assembly, protective clothing, communication and target acquisition technologies. This will provide the infantryman with increased lethality, survivability and situational awareness enhancements. Initial funding in this line will be used to determine and exploit integration opportunities on existing infantry equipment being fielded in the near future. Funds will also be used for the Research & Development of a future integrated system that is modular in design and will enhance the infantryman's mobility, lethality, survivability and communications. The IICS is an overarching program, consisting of three main phases. The initial phase enables base-lining current systems. The second phase consists of an iterative process integrating mid-term capabilities, and the final phase inserts technology where opportunities exist. The program will leverage joint technologies but the Marine infantryman's unique items that are worn, carried or consumed will be used for the baseline.</p>																																																									
<p>(U) ACCOMPLISHMENTS/PLANNED PROGRAM:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">COST (\$ in Millions)</th> <th style="text-align: center;">FY 2003</th> <th style="text-align: center;">FY 2004</th> <th style="text-align: center;">FY 2005</th> </tr> </thead> <tbody> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td style="text-align: right;">0.168</td> <td style="text-align: right;">0.865</td> <td style="text-align: right;">0.969</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Program management, specialized engineering and technical support.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">COST (\$ in Millions)</th> <th style="text-align: center;">FY 2003</th> <th style="text-align: center;">FY 2004</th> <th style="text-align: center;">FY 2005</th> </tr> </thead> <tbody> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td style="text-align: right;">0.229</td> <td style="text-align: right;">0.600</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Modeling and Simulation (M&S) scenario development to refine and validate models for assessing IICS efforts (Military Operations in Urban Terrain (MOUT) & Jungle Vignettes; and Mountain and Nuclear, Biological and Chemical (MNTN & NBC) environment vignettes.)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">COST (\$ in Millions)</th> <th style="text-align: center;">FY 2003</th> <th style="text-align: center;">FY 2004</th> <th style="text-align: center;">FY 2005</th> </tr> </thead> <tbody> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.199</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td style="text-align: center;">1</td> <td></td> </tr> </tbody> </table> <p>Development of prototype working integration issues with the development of combat gear (Soldier and Biological Chemical Command (SBCCOM) Natick, MA)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">COST (\$ in Millions)</th> <th style="text-align: center;">FY 2003</th> <th style="text-align: center;">FY 2004</th> <th style="text-align: center;">FY 2005</th> </tr> </thead> <tbody> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.712</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Product Development and integration efforts.</p>										COST (\$ in Millions)	FY 2003	FY 2004	FY 2005	Accomplishment/Effort Subtotal Cost	0.168	0.865	0.969	RDT&E Articles Qty				COST (\$ in Millions)	FY 2003	FY 2004	FY 2005	Accomplishment/Effort Subtotal Cost	0.229	0.600	0.000	RDT&E Articles Qty				COST (\$ in Millions)	FY 2003	FY 2004	FY 2005	Accomplishment/Effort Subtotal Cost	0.000	0.199	0.000	RDT&E Articles Qty		1		COST (\$ in Millions)	FY 2003	FY 2004	FY 2005	Accomplishment/Effort Subtotal Cost	0.000	0.000	0.712	RDT&E Articles Qty			
COST (\$ in Millions)	FY 2003	FY 2004	FY 2005																																																						
Accomplishment/Effort Subtotal Cost	0.168	0.865	0.969																																																						
RDT&E Articles Qty																																																									
COST (\$ in Millions)	FY 2003	FY 2004	FY 2005																																																						
Accomplishment/Effort Subtotal Cost	0.229	0.600	0.000																																																						
RDT&E Articles Qty																																																									
COST (\$ in Millions)	FY 2003	FY 2004	FY 2005																																																						
Accomplishment/Effort Subtotal Cost	0.000	0.199	0.000																																																						
RDT&E Articles Qty		1																																																							
COST (\$ in Millions)	FY 2003	FY 2004	FY 2005																																																						
Accomplishment/Effort Subtotal Cost	0.000	0.000	0.712																																																						
RDT&E Articles Qty																																																									
(U) Total \$	0.397	1.664	1.681																																																						

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2004

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

PROJECT NUMBER AND NAME

RDT&E, N /BA-4 Advanced Component Dev & Prototypes (ADCP& 0603635M Marine Corps Ground Combat/Supt Arms

C2256 Integrated Infantry Combat System (IICS)

(U) PROJECT CHANGE SUMMARY:

FY2003

FY2004

FY2005

(U) FY 2004 President's Budget:

1.740

1.682

1.692

(U) Adjustments from the President's Budget:

(U) Congressional Program Reductions

(U) Congressional Rescissions

(U) Congressional Increases

(U) Reprogrammings

(U) SBIR

-0.031

(U) Minor Affordability Adjustment

-1.312

-0.018

-0.011

(U) FY 2005 President's Budget:

0.397

1.664

1.681

CHANGE SUMMARY EXPLANATION:

(U) Funding: See Above.

(U) Schedule: Not Applicable.

(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable.

(U) Related RDT&E: (U) PE 0602131M (Marine Corps Landing Force Technology)

(U) PE 0603640M (Marine Corps Advanced Technology Demonstration)

(U) PE 0604657A (US Army Land Warrior Program)

(U) C. ACQUISITION STRATEGY: The Integrated Infantry Combat System is a phased approach of enhancements to the rifle squad with an endstate of a "system." Modularity and integration are important design factors. Risks associated with technology creep and cost will be mitigated by 1) improving the equipment and making it modular in form, 2) integrating these individual improvements into the squad as a whole, and 3) completing this via a phased approach.

(U) E. MAJOR PERFORMERS:

Oct 02, Oct 03 - Concurrent Technologies Corporation, Johnstown, PA - Produced a technology roadmap for Marine infantry equipment.

Oct 04 - M2 Technologies & Whitney, Bradley & Brown Tysons Corner, VA - Concept of Operations, Capabilities Development.

May 02 - SAIC Corp, Dumfries, VA - Producing the Integrated Computer Aided Manufacturing (ICAM) model which models relative worth of different Marine infantry equipment.

Oct 02, Oct 03, Oct 04 - NSWC Dahlgren, VA - Specialized engineering and technical support.

Feb 03, Oct 03, Oct 04 - BAE Inc., Stafford, VA - Program management and technical support.

Oct 04 - Titan Systems, Stafford, VA - Program management and technical support.

(U) SCHEDULE PROFILE: Not Applicable.

UNCLASSIFIED

Exhibit R-3 Cost Analysis						DATE: February 2004						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N /BA-4 Dem/Val			0603635M MC Ground Combat/Supt Arms			C2256 Integrated Infantry Combat System						
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development	MIPR	CTC, Johnstown, PA	0.294							0.000	0.294	
Product Development	MIPR	SBCCOM, NATICK, MA	0.125			0.199	10/03			Cont.	Cont.	
Product Development	MIPR	TBD						0.500	10/04	Cont.	Cont.	
Product Development	MIPR	SAIC Corp, Dumfries, VA	0.753							Cont.	Cont.	
Product Development	RCP	Various	1.704							Cont.	Cont.	
Subtotal Product Dev			2.876	0.000		0.199		0.500		Cont.	Cont.	
Remarks:												
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
SUPPORT												
Program Support	WR	NSWC DAHLGREN, VA	0.519	0.200	10/02	0.284	10/03	0.298	10/04	Cont.	Cont.	
Program Support	RCP	SAIC, Inc., Dumfries, VA	0.170			0.150	10/03	0.148	10/04	Cont.	Cont.	
Program Support	RCP	BAE, Inc., Stafford, VA				0.000	10/03	0.000	10/04	Cont.	Cont.	
Program Support	RCP	Titan Systems Inc, Stafford, VA				0.331	10/03	0.325	10/04	Cont.	Cont.	
Program Support	RCP	M2/WB&B Inc. Tysons Corner, VA				0.500	10/03	0.360	10/04	Cont.	Cont.	
Program Support	RCP	BAE, Inc., Stafford, VA	0.255	0.168	10/02	0.150	10/03	0.000	10/04	Cont.	Cont.	
Subtotal Support			0.944	0.368		1.415		1.131		Cont.	Cont.	
Remarks:												
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Travel	WR	MCSC, Quantico, VA	0.110	0.029	10/02	0.050	10/03	0.050	10/04	Cont.	Cont.	
Subtotal Management			0.110	0.029		0.050		0.050		Cont.	Cont.	
Remarks:												
Total Cost				0.397		1.664		1.681		Cont.	Cont.	

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2004																																																																																							
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME																																																																																								
RDT&E, N /BA-4 Demonstration/Validation	0603635M Marine Corps Ground Combat/Supt Arms				C2508 Internally Transportable Vehicle (ITV)																																																																																								
COST (\$ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY2008	FY2009	Cost to Complete	Total Program																																																																																				
Project Cost	2.063	0.000	5.715	0.003	0.000	0.000	0.000	0.000	7.781																																																																																				
RDT&E Articles Qty																																																																																													
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Internally Transportable Vehicles (ITV) program was previously known as the Light Strike Vehicle (LSV) program. This project develops a joint MV-22 aircraft transportable family of light tactical, wheeled vehicles. The ITV's will provide reconnaissance units with a high mobility weapons platform. Follow-on variants will address logistics, command and control, medical and personnel movement missions. The ITV will replace the Fast Attack Vehicles (FAVs) currently employed throughout the Marine Air Ground Task Force (MAGTF).</p> <p>(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 35%;">COST (\$ in Millions)</th> <th style="width: 15%;">FY 2003</th> <th style="width: 15%;">FY 2004</th> <th style="width: 15%;">FY 2005</th> </tr> </thead> <tbody> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td style="text-align: right;">0.300</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.469</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4">ITV: Research and Engineering Studies</td> </tr> <tr> <td>COST (\$ in Millions)</td> <td>FY 2003</td> <td>FY 2004</td> <td>FY 2005</td> </tr> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td style="text-align: right;">0.160</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">1.000</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4">ITV: Engineering and Logistic Support</td> </tr> <tr> <td>COST (\$ in Millions)</td> <td>FY 2003</td> <td>FY 2004</td> <td>FY 2005</td> </tr> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td style="text-align: right;">0.660</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.800</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4">ITV: Program Management and Support</td> </tr> <tr> <td>COST (\$ in Millions)</td> <td>FY 2003</td> <td>FY 2004</td> <td>FY 2005</td> </tr> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td style="text-align: right;">0.643</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4">ITV: Prototype Development & Testing</td> </tr> <tr> <td>COST (\$ in Millions)</td> <td>FY 2003</td> <td>FY 2004</td> <td>FY 2005</td> </tr> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td style="text-align: right;">0.300</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">3.446</td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4">ITV: Procure Test Vehicles</td> </tr> <tr> <td>(U) Total \$</td> <td style="text-align: right;">2.063</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">5.715</td> </tr> </tbody> </table>										COST (\$ in Millions)	FY 2003	FY 2004	FY 2005	Accomplishment/Effort Subtotal Cost	0.300	0.000	0.469	RDT&E Articles Qty				ITV: Research and Engineering Studies				COST (\$ in Millions)	FY 2003	FY 2004	FY 2005	Accomplishment/Effort Subtotal Cost	0.160	0.000	1.000	RDT&E Articles Qty				ITV: Engineering and Logistic Support				COST (\$ in Millions)	FY 2003	FY 2004	FY 2005	Accomplishment/Effort Subtotal Cost	0.660	0.000	0.800	RDT&E Articles Qty				ITV: Program Management and Support				COST (\$ in Millions)	FY 2003	FY 2004	FY 2005	Accomplishment/Effort Subtotal Cost	0.643	0.000	0.000	RDT&E Articles Qty				ITV: Prototype Development & Testing				COST (\$ in Millions)	FY 2003	FY 2004	FY 2005	Accomplishment/Effort Subtotal Cost	0.300	0.000	3.446	RDT&E Articles Qty				ITV: Procure Test Vehicles				(U) Total \$	2.063	0.000	5.715
COST (\$ in Millions)	FY 2003	FY 2004	FY 2005																																																																																										
Accomplishment/Effort Subtotal Cost	0.300	0.000	0.469																																																																																										
RDT&E Articles Qty																																																																																													
ITV: Research and Engineering Studies																																																																																													
COST (\$ in Millions)	FY 2003	FY 2004	FY 2005																																																																																										
Accomplishment/Effort Subtotal Cost	0.160	0.000	1.000																																																																																										
RDT&E Articles Qty																																																																																													
ITV: Engineering and Logistic Support																																																																																													
COST (\$ in Millions)	FY 2003	FY 2004	FY 2005																																																																																										
Accomplishment/Effort Subtotal Cost	0.660	0.000	0.800																																																																																										
RDT&E Articles Qty																																																																																													
ITV: Program Management and Support																																																																																													
COST (\$ in Millions)	FY 2003	FY 2004	FY 2005																																																																																										
Accomplishment/Effort Subtotal Cost	0.643	0.000	0.000																																																																																										
RDT&E Articles Qty																																																																																													
ITV: Prototype Development & Testing																																																																																													
COST (\$ in Millions)	FY 2003	FY 2004	FY 2005																																																																																										
Accomplishment/Effort Subtotal Cost	0.300	0.000	3.446																																																																																										
RDT&E Articles Qty																																																																																													
ITV: Procure Test Vehicles																																																																																													
(U) Total \$	2.063	0.000	5.715																																																																																										

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-4 Demonstration/Validation	0603635M Marine Corps Ground Combat/Supt Arms	C2508 Internally Transportable Vehicle (ITV)
(U) Project Change Summary	FY2003	FY 2004
(U) FY2004 President's Budget	1.945	0.000
(U) Adjustments from the FY 2004 President's Budget:		
(U) Congressional/OSD Program Reductions		
(U) Congressional Rescissions		
(U) Congressional Increases		
(U) Reprogrammings	0.264	5.746
(U) SBIR/STTR Transfer	-0.039	
(U) Minor Affordability Adjustment	-0.107	-0.031
(U) FY 2005 President's Budget	2.063	5.715
CHANGE SUMMARY EXPLANATION:		
(U) Funding: Changes in FY 03 are due to a \$39K SBIR reduction, a \$107K affordability adjustment and a \$264K increase due to realignment of Marine Corps funds. Changes in FY05 are due to a \$31K minor affordability reduction and a \$5.746M increase due to realignment of Marine Corps funds		
(U) Schedule: Not Applicable.		
(U) Technical: Not Applicable.		
 (U) C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable.		
 (U) Related RDT&E: United States Special Operations Command (USSOCOM) joint participation in the ITV program. USSOCOM funding will be applied towards testing and evaluation of the Expeditionary Assault variant of the ITV in conjunction with Marine Corps funding.		
 (U) D. ACQUISITION STRATEGY: The program is in the final phases of requirements revision. The current acquisition strategy is for procurement of a Commercial, off-the-shelf/Non-Developmental Item (COTS/NDI) solution. This strategy is evolving into modified COTS or Spiral Development, based upon results of ongoing studies.		
 (U) E. MAJOR PERFORMERS:		
FY03 - USSOCOM, Test and Evaluation		
FY03 - Naval Air Warfare Center, Carderrock, MD Engineering Support		
FY05 - TBD, Procure Test Vehicles		

UNCLASSIFIED

Exhibit R-3 Cost Analysis									DATE:			
									February 2004			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N /BA-4 Dem/Val			0603635M MC Ground Combat/Supt Arms			C2508 Internally Transportable Vehicle (ITV)						
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Prototype Development	RCP	MCSC, Quantico VA	6.454	0.300	05/03			3.446	2Q/05	0.000	10.200	10.200
Product Development	RCP	MCSC, Quantico VA	1.294	0.500	01/03					0.000	1.794	1.794
Subtotal Product Dev			7.748	0.800		0.000		3.446		0.000	11.994	11.994
Remarks:												
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Development Support	WR	Naval Surface Warfare Ctr VA	0.821	0.340	12/02			0.600	1Q/05	0.000	1.761	1.761
Development Support	MIPR	Army Engineers, MS	0.125					0.100	1Q/05	0.000	0.225	0.225
Aircraft Interface	WR	Naval Air Warfare Center, MD	0.300	0.060	12/02			0.300	1Q/05	0.000	0.660	0.660
Development Support	WR	Naval Surface Warfare Ctr IN	0.165	0.100	12/02			0.200	1Q/05	0.000	0.465	0.465
Structural Analysis	MIPR	Tank-Auto Command, IL	0.185					0.000		0.000	0.185	0.185
Subtotal Support			1.596	0.500		0.000		1.200		0.000	3.296	3.296
Remarks:												
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Reliability Testing	MIPR	Aberdeen Proving Grnd, MD	1.139							0.000	1.139	1.139
Developmental Test & Eval	WR	Naval Air Warfare Center, MD	0.200	0.380	01/03			0.277	1Q/05	0.000	0.857	0.857
Subtotal T&E			1.339	0.380		0.000		0.277		0.000	1.996	1.996
Remarks:												
Cost Categories (Tailor to WBS, or Sys/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Contractor Eng Suppt		MCSC, Quantico VA	0.185	0.130	12/03			0.300	1Q/05	0.000	0.615	0.615
Prog. Mgt, Spt, & Tvl		MCSC, Quantico VA	0.183	0.253	12/03			0.492	1Q/05	0.000	0.928	0.928
Subtotal Management			0.368	0.383		0.000		0.792		0.000	1.543	1.543
Remarks:												
Total Cost			11.051	2.063		0.000		5.715		0.000	18.829	

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2004			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-4 Advanced Component Dev & Prototypes (ADCP&P)			PROGRAM ELEMENT NUMBER AND NAME 0603635M Marine Corps Ground Combat/Supt Arms			PROJECT NUMBER AND NAME C2614 Shoulder-Launched Multi-Purpose Assault Weapon (SMAW) Follow-on			
COST (\$ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	10.510	10.236	14.550	11.607	2.892	0.677	0.672	0.000	51.144
RDT&E Articles Qty									
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Follow-On To Shoulder-Launched Multi-Purpose Assault Weapon (FOTS) is an accurate, shoulder-fired, assault weapon designed to defeat a variety of targets on the battlefield. It consists of a launcher, sighting and fire control system, and projectile. FOTS will replace the Shoulder-Launched Multi-Purpose Assault Weapon (SMAW) without loss of present capabilities while providing: 1) fire from enclosure capability, 2) reduced launcher signature, 3) increased lethality, 4) greater breaching effects, 5) lighter weight, 6) increased reliability, and 7) increased availability.									
(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:									
COST (\$ in Millions)	FY 2003		FY 2004		FY 2005				
Accomplishment/Effort Subtotal Cost	7.141		0.000		0.000				
RDT&E Articles Qty									
System integration, concept and technical development									
COST (\$ in Millions)	FY 2003		FY 2004		FY 2005				
Accomplishment/Effort Subtotal Cost	0.333		6.296		0.000				
RDT&E Articles Qty									
Conduct systems testing and evaluation in support of source selection for phase B									
COST (\$ in Millions)	FY 2003		FY 2004		FY 2005				
Accomplishment/Effort Subtotal Cost	0.991		0.955		1.471				
RDT&E Articles Qty									
Provide government program management / in-house support									
COST (\$ in Millions)	FY 2003		FY 2004		FY 2005				
Accomplishment/Effort Subtotal Cost	0.079		0.100		0.140				
RDT&E Articles Qty									
Travel/Temporary Additional Duty (TAD)									
COST (\$ in Millions)	FY 2003		FY 2004		FY 2005				
Accomplishment/Effort Subtotal Cost	1.020		1.000		1.920				
RDT&E Articles Qty									
Provide government engineering and technical support									
COST (\$ in Millions)	FY 2003		FY 2004		FY 2005				
Accomplishment/Effort Subtotal Cost	0.946		0.000		0.000				
RDT&E Articles Qty									
Provide Contractor PM, Acq, and Engineering Support									

R-1 SHOPPING LIST - Item No. 58

UNCLASSIFIED

Exhibit R-2a, RDTE,N Project Justification
(Exhibit R-2a, page 11 of 16)

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification				DATE:		February 2004													
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-4 Advanced Component Dev & Prototypes (ADCP&P)		PROGRAM ELEMENT NUMBER AND NAME 0603635M Marine Corps Ground Combat/Supt Arms		PROJECT NUMBER AND NAME C2614 Shoulder-Launched Multi-Purpose Assault Weapon (SMAW) Follow-on															
COST (\$ in Millions)		FY 2003		FY 2004		FY 2005													
Accomplishment/Effort Subtotal Cost		0.000		1.885		10.719													
RDT&E Articles Qty																			
System development and demonstration RISK MITIGATIONS																			
COST (\$ in Millions)		FY 2003		FY 2004		FY 2005													
Accomplishment/Effort Subtotal Cost		0.000		0.000		0.300													
RDT&E Articles Qty																			
Initial Operational Test and Evaluation (IOT&E) preparatory work																			
(U) Total \$		10.510		10.236		14.550													
(U) PROJECT CHANGE SUMMARY:																			
		FY2003		FY2004		FY2005													
(U) FY 2004 President's Budget:		10.185		10.351		18.422													
(U) Adjustments from the President's Budget:																			
(U) Congressional/OSD Program Reductions																			
(U) Congressional Rescissions																			
(U) Congressional Increases																			
(U) Reprogrammings		0.334				-1.800													
(U) SBIR/STTR Transfer		-0.009																	
(U) Minor Affordability Adjustment				-0.115		-2.072													
(U) FY 2005 President's Budget:		10.510		10.236		14.550													
CHANGE SUMMARY EXPLANATION:																			
(U) Funding: See above.																			
(U) Schedule: Not Applicable.																			
(U) Technical: Not Applicable.																			
(U) C. OTHER PROGRAM FUNDING SUMMARY:																			
Line Item No. & Name		FY 2003		FY 2004		FY 2005		FY 2006		FY 2007		FY 2008		FY 2009		To Compl		Total Cost	
(U) PMC 301600 Follow On To SMAW		0.000		0.000		0.000		2.129		2.435		2.374		4.242		Continuing		Continuing	
(U) PANMC 147100 Follow On To SMAW		0.000		0.000		0.000		9.561		60.137		77.882		118.933		Continuing		Continuing	

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-4 Advanced Component Dev & Prototypes (ADCP&P)	PROGRAM ELEMENT NUMBER AND NAME 0603635M Marine Corps Ground Combat/Supt Arms	PROJECT NUMBER AND NAME C2614 Shoulder-Launched Multi-Purpose Assault Weapon (SMAW) Follow-on
<p>(U) Related RDT&E: Not Applicable.</p> <p>(U) D. ACQUISITION STRATEGY: The acquisition strategy for Follow-On To Shoulder-Launched Multi-Purpose Assault Weapon (FOTS) represents a fundamental shift from the traditional military systems acquisition paradigm in which external market demand is leveraged by offering a fully developed system to external markets. Rather, the market place will influence the determination of the ultimate design of the weapon in order to capitalize on an expanded customer base to facilitate interoperability and achieve economies of scale. The subsystem integration and demonstration phase was a competitive cost plus fixed fee program, awarding to multiple contractors and culminating in a comparative demonstration, leading to a down-selection to a single contractor for the System Development and Demonstration phase. System Development and Demonstration phase will be full and open competition, cost plus fixed fee.</p> <p>(U) E. MAJOR PERFORMERS: May 03 - Lockheed Martin (Orlando, FL) and General Dynamics (Burlington, VT). System integration. Oct 04 - TBD. System development and demonstration.</p>		

UNCLASSIFIED

Exhibit R-3 Cost Analysis									DATE: February 2004			
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT					PROJECT NUMBER AND NAME			
RDT&E, N /BA-4 Advanced Component Dev & Prototypes (ADCP&P)				0603635M MC Ground Combat/Supt Arms					C2614 SMAW Follow-on			
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development	SS/CPAF	CMS Defense Sys, Titusville, FL	4.000							0.000	4.000	
Product Development	SS/CPAF	InvenCom Inc., Charlotte, NC	1.300							0.000	1.300	
Product Development	SS/CPAF	Raphael, USA	0.600							0.000	0.600	
System Integration	C/CPAF	Lockheed Martin, Orlando, FL		3.508	05/03	1.000	04/04			0.000	4.508	
System Integration	C/CPAF	General Dynamics, Burlington, VT		3.333	05/03	0.855	04/04			0.000	4.188	
System Devel & Demo	SS/CPAF	TBD						9.162	10/04	0.000	9.162	
Product Development	C/CPAF	Auto Opening Device		0.300	04/03					0.000	0.300	
LRIP	SS/FFP	TBD						1.800	10/04	Cont.	Cont.	
Subtotal Product Dev			5.900	7.141		1.855		10.962		Cont.	Cont.	
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Program Support	WR	NSWC, Dahlgren, VA	2.577	0.809	10/02	0.580	10/03	1.251	10/04	Cont.	Cont.	
Program Support	WR	NAVSEA, Indian Head, MD	0.501	0.180	04/03					0.000	0.681	
Program Support	C/IDIQ	Telecolote Inc., Huntsville, AL	0.124	0.031	04/03	0.075	10/03	0.075	10/04	Cont.	Cont.	
Program Support	C/FFP	BAE Systems, Stafford, VA	0.000	0.946	10/02	0.375	10/03	0.496	10/04	Cont.	Cont.	
Subtotal Support			3.202	1.966		1.030		1.822		Cont.	Cont.	
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Operational T&E	VARIOUS	MCOTEA, Quantico, VA		0.020	05/03			0.300	10/04	Cont.	Cont.	
Developmental Test & Eval	VARIOUS	NSWC Dahlgren Div, Dahlgren, VA		0.200	07/03	6.406	10/03			0.000	6.606	
Test & Evaluation	WR	NSWC Crane, IN		0.113	05/03							
Subtotal T&E			0.000	0.333		6.406		0.300		Cont.	Cont.	
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Management Support	WR	MCSC, Quantico, VA	0.406	1.070	10/02	0.945	10/03	1.466	10/04	Cont.	Cont.	
Subtotal Management			0.406	1.070		0.945		1.466		Cont.	Cont.	
Remarks:												
Total Cost				10.510		10.236		14.550		Cont.	Cont.	

UNCLASSIFIED

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-4 Advanced Component Dev & Prototypes (ADCP&P)	PROGRAM ELEMENT 0603635M MC Ground Combat/Supt Arms	PROJECT NUMBER AND NAME C2614 SMAW Follow-on

FOLLOW ON TO SMAW (FOTS)

FISCAL YEARS	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
MILESTONES									
MS B			MS B Sept 04						
MS C					MS C Apr 06				
FRP						FRP Apr 07			
CONT ACTIV.									
SIP Contract Award	5/23/03 SIP Contract Award								
Competitive Demo		Jun 04 Competitive Demonstration							
SDD Contract Award			Oct 04 SDD Contract Award						
LRIP Option				Apr 06 LRIP Option Exercised					
FRP Option					Apr 07 FRP Contract Award				
TESTING									
DT						Sep 04 - Mar 06 SDD Testing and Qualification			
IOT&E						Jan 07 - Mar 07 OT&E (TBD)			
IOC							IOC Mar 08		
FOC									FOC Sept 11

Program Funding Summary

<u>Program Funding Summary</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) RDT&E,N	10.510	10.236	14.550	11.607	2.892	0.677	0.672	Continuing	Continuing
(U) PMC 301600 Follow On To SMAW	0.000	0.000	0.000	2.129	2.435	2.374	4.242	Continuing	Continuing
(U) PANMC 147100 Rockets All Types (FOTS)	0.000	0.000	0.000	9.561	60.137	77.882	118.933	Continuing	Continuing

UNCLASSIFIED

Exhibit R-4/4a Schedule Profile/Detail		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-4 Advanced Component Dev & Prototypes (ADCP&P)	PROGRAM ELEMENT 0603635M MC Ground Combat/Supt Arms	PROJECT NUMBER AND NAME C2614 SMAW Follow-on

[illegible]