

UNCLASSIFIED

CLASSIFICATION:

| | | | | | | | | | | | |
|--|------------------|---------|---------|---------|---------|----------------------------|---------|---------------|---------|------------------|---------------|
| EXHIBIT R-2, RDT&E Budget Item Justification | | | | | | | | DATE: | | | |
| | | | | | | | | February 2003 | | | |
| APPROPRIATION/BUDGET ACTIVITY | | | | | | R-1 ITEM NOMENCLATURE | | | | | |
| RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5 | | | | | | 0604601N, Mine Development | | | | | |
| COST (\$ in Millions) | Prior Years Cost | FY 2002 | FY 2003 | FY 2004 | FY 2005 | FY 2006 | FY 2007 | FY 2008 | FY 2009 | Cost to Complete | Total Program |
| Project Cost | 170.698 | 0.000 | 1.458 | 1.497 | 6.247 | 15.646 | 15.886 | 16.149 | 5.671 | Continuing | Continuing |
| RDT&E Articles Qty | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | 0 |
| (U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: | | | | | | | | | | | |
| <p>This project is the only R&D program for mine systems, and is the sole support for the capability to maintain the effectiveness of mines facing new threat targets and increasing emphasis on major regional conflicts and littoral warfare in shallow water. Project tasks are grouped into several areas:</p> <p>(1a) Threat Modeling/Analysis, which collects, analyzes, and develops digital models of data on current priority threat target characteristics to support computer simulations;</p> <p>(1b) Target Detection and Response, which uses target models to develop optimal mine designs, settings, and firing algorithms;</p> <p>(2) Developing and upgrading Tactical Decision Aids (TDAs) to assist the warfighter in planning and placing more effective minefields;</p> <p>(3) Designing and developing the 2010 Mine, which is a replacement for Underwater Mine MK 56. Mine MK 56 is designated to be removed from service by the year 2010. The 2010 Mine design will include provisions for future capability upgrades. Future upgrades might include (a) 2-way remote command & control of the minefield, (b) precision standoff delivery from aircraft, (c) an enlarged target detection and damage radius, and (d) advanced power systems for the mine.</p> | | | | | | | | | | | |

R-1 SHOPPING LIST - Item No. 122

UNCLASSIFIED

Exhibit R-2a, RDTE Project Justification
(Exhibit R-2a, page 1 of 10)

UNCLASSIFIED

CLASSIFICATION:

| | | | | |
|---|---|--|-------|-------|
| EXHIBIT R-2a, RDT&E Project Justification | | DATE: February 2003 | | |
| APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5 | PROGRAM ELEMENT NUMBER AND NAME 0604601N, Mine Development | PROJECT NUMBER AND NAME Q0267, Mine Development | | |
| (U) B. Accomplishments/Planned Program | | | | |
| | FY 02 | FY 03 | FY 04 | FY 05 |
| Accomplishments/Effort/Subtotal Cost | 0.000 | 0.422 | 0.455 | 4.696 |
| RDT&E Articles Quantity | | | | |
| <u>Product Development:</u> FY 2003 PLANS - (\$0.422) System Engineering: Conduct Analysis of Alternatives for 2010 Mine Development. FY 2004 PLANS - (\$0.455) System Engineering: Draft requirements for 2010 Mine. FY 2005 PLANS - (\$4.210) Hardware Development: Initiate 2010 Mine design and development. - (\$0.486) System Engineering: Initiate development of Concept of Operations and conduct other tactical analysis modeling and simulation in support of 2010 Mine development. | | | | |

R-1 SHOPPING LIST - Item No.

122

UNCLASSIFIED

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 2 of 10)

UNCLASSIFIED

CLASSIFICATION:

| | | | | | | | | | | | | | | | | | | | |
|--|---|--|----------------------------|-------|--|-------|-------|-------|-------|--------------------------------------|-------|-------|-------|-------|-------------------------|--|--|--|--|
| EXHIBIT R-2a, RDT&E Project Justification | | | DATE: February 2003 | | | | | | | | | | | | | | | | |
| APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5 | PROGRAM ELEMENT NUMBER AND NAME 0604601N, Mine Development | PROJECT NUMBER AND NAME Q0267, Mine Development | | | | | | | | | | | | | | | | | |
| (U) B. Accomplishments/Planned Program <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"><tr><td style="width: 30%;"></td><td style="width: 15%;">FY 02</td><td style="width: 15%;">FY 03</td><td style="width: 15%;">FY 04</td><td style="width: 15%;">FY 05</td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td style="text-align: center;">0.000</td><td style="text-align: center;">0.861</td><td style="text-align: center;">0.894</td><td style="text-align: center;">1.469</td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></table> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"><p><u>Development Support:</u></p><p>FY 2003 PLANS</p><ul style="list-style-type: none">- (\$0.811) Software Development: Develop target detection algorithms for diesel-electric mini-sub and MCM ships. Continue development of PC-based, MEDAL-compliant TDA for minefield- (\$0.050) Integrated Logistic Support (ILS)<p>FY 2004 PLANS</p><ul style="list-style-type: none">- (\$0.844) Software Development: Continue development of target detection algorithms and PC-based, MEDAL-compliant TDA for minefield planning.- (\$0.050) Integrated Logistic Support (ILS)<p>FY 2005 PLANS</p><ul style="list-style-type: none">- (\$1.319) Software Development: Continue development of target detection algorithms and PC-based, MEDAL-compliant TDA for minefield planning.- (\$0.150) Integrated Logistic Support (ILS)</div> | | | | | | FY 02 | FY 03 | FY 04 | FY 05 | Accomplishments/Effort/Subtotal Cost | 0.000 | 0.861 | 0.894 | 1.469 | RDT&E Articles Quantity | | | | |
| | FY 02 | FY 03 | FY 04 | FY 05 | | | | | | | | | | | | | | | |
| Accomplishments/Effort/Subtotal Cost | 0.000 | 0.861 | 0.894 | 1.469 | | | | | | | | | | | | | | | |
| RDT&E Articles Quantity | | | | | | | | | | | | | | | | | | | |

R-1 SHOPPING LIST - Item No.

122

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

| EXHIBIT R-2a, RDT&E Project Justification | | | DATE: February 2003 | | | | | | | | | | | | | | | | |
|--|---|--|----------------------------|-------|--|-------|-------|-------|-------|--------------------------------------|-------|-------|-------|-------|-------------------------|--|--|--|--|
| APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5 | PROGRAM ELEMENT NUMBER AND NAME 0604601N, Mine Development | PROJECT NUMBER AND NAME Q0267, Mine Development | | | | | | | | | | | | | | | | | |
| (U) B. Accomplishments/Planned Program <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px auto;"><thead><tr><th style="width: 30%;"></th><th style="width: 15%;">FY 02</th><th style="width: 15%;">FY 03</th><th style="width: 15%;">FY 04</th><th style="width: 15%;">FY 05</th></tr></thead><tbody><tr><td>Accomplishments/Effort/Subtotal Cost</td><td style="text-align: center;">0.000</td><td style="text-align: center;">0.175</td><td style="text-align: center;">0.148</td><td style="text-align: center;">0.082</td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></tbody></table> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"><p><u>Management:</u></p><p>FY 2003 PLANS</p><ul style="list-style-type: none">- (\$0.170) Program Management Support- (\$0.005) Travel<p>FY 2004 PLANS</p><ul style="list-style-type: none">- (\$0.143) Program Management Support- (\$0.005) Travel<p>FY 2005 PLANS</p><ul style="list-style-type: none">- (\$72.) Program Management Support- (\$0.010) Travel</div> | | | | | | FY 02 | FY 03 | FY 04 | FY 05 | Accomplishments/Effort/Subtotal Cost | 0.000 | 0.175 | 0.148 | 0.082 | RDT&E Articles Quantity | | | | |
| | FY 02 | FY 03 | FY 04 | FY 05 | | | | | | | | | | | | | | | |
| Accomplishments/Effort/Subtotal Cost | 0.000 | 0.175 | 0.148 | 0.082 | | | | | | | | | | | | | | | |
| RDT&E Articles Quantity | | | | | | | | | | | | | | | | | | | |

R-1 SHOPPING LIST - Item No.

122

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

| EXHIBIT R-2a, RDT&E Project Justification | | | DATE: February 2003 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|--|----------------------------|---------|--|---------|---------|---------|---------|--------------|--|--|--|--|--------------------------|-------|-------|-------|-------|-------------------------|-------|-------|-------|-------|-------------------|-------|--------|--------|--------|------------------------|--|--|--|--|------------------|-------|--------|--------|--------|----------|--|--|--|--|--|-------|--------|--------|--------|
| APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5 | PROGRAM ELEMENT NUMBER AND NAME 0604601N, Mine Development | PROJECT NUMBER AND NAME Q0267, Mine Development | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>(U) C. PROGRAM CHANGE SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: right;">FY 2002</th> <th style="text-align: right;">FY 2003</th> <th style="text-align: right;">FY 2004</th> <th style="text-align: right;">FY 2005</th> </tr> </thead> <tbody> <tr> <td>(U) Funding:</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>FY03 President's Budget:</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">1.491</td> <td style="text-align: right;">1.592</td> <td style="text-align: right;">6.652</td> </tr> <tr> <td>FY04 President's Budget</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">1.458</td> <td style="text-align: right;">1.497</td> <td style="text-align: right;">6.247</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> <td style="text-align: right; border-top: 1px solid black;">-0.033</td> <td style="text-align: right; border-top: 1px solid black;">-0.095</td> <td style="text-align: right; border-top: 1px solid black;">-0.405</td> </tr> <tr> <td colspan="5" style="padding-top: 10px;">Summary of Adjustments</td> </tr> <tr> <td>Misc Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> <td style="text-align: right; border-top: 1px solid black;">-0.033</td> <td style="text-align: right; border-top: 1px solid black;">-0.095</td> <td style="text-align: right; border-top: 1px solid black;">-0.405</td> </tr> <tr> <td colspan="5" style="padding-top: 10px;">Subtotal</td> </tr> <tr> <td></td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">-0.033</td> <td style="text-align: right;">-0.095</td> <td style="text-align: right;">-0.405</td> </tr> </tbody> </table> <p style="margin-top: 20px;">(U) Schedule:</p> <p style="margin-left: 40px;">Not Applicable</p> <p style="margin-top: 20px;">(U) Technical:</p> <p style="margin-left: 40px;">Not Applicable</p> | | | | | | FY 2002 | FY 2003 | FY 2004 | FY 2005 | (U) Funding: | | | | | FY03 President's Budget: | 0.000 | 1.491 | 1.592 | 6.652 | FY04 President's Budget | 0.000 | 1.458 | 1.497 | 6.247 | Total Adjustments | 0.000 | -0.033 | -0.095 | -0.405 | Summary of Adjustments | | | | | Misc Adjustments | 0.000 | -0.033 | -0.095 | -0.405 | Subtotal | | | | | | 0.000 | -0.033 | -0.095 | -0.405 |
| | FY 2002 | FY 2003 | FY 2004 | FY 2005 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (U) Funding: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FY03 President's Budget: | 0.000 | 1.491 | 1.592 | 6.652 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FY04 President's Budget | 0.000 | 1.458 | 1.497 | 6.247 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total Adjustments | 0.000 | -0.033 | -0.095 | -0.405 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Summary of Adjustments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Misc Adjustments | 0.000 | -0.033 | -0.095 | -0.405 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Subtotal | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0.000 | -0.033 | -0.095 | -0.405 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

R-1 SHOPPING LIST - Item No. 122

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

| | | | | | | | | | |
|---|--|--|---|--|--|--|--|----------------------------|--|
| EXHIBIT R-2a, RDT&E Project Justification | | | | | | | | DATE: February 2003 | |
| APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5 | | | PROGRAM ELEMENT NUMBER AND NAME 0604601N, Mine Development | | | PROJECT NUMBER AND NAME Q0267, Mine Development | | | |

(U) D. OTHER PROGRAM FUNDING SUMMARY:

| <u>Line Item No. & Name</u> | <u>FY 2002</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 Complete</u> | <u>Total Cost</u> |
|---------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------|-------------------|
| Line 323100, WPN | | | | | | | | | | |
| QS Mod 3 | 3.828 | 1.986 | 3.210 | 3.019 | 3.065 | 3.121 | 3.168 | 3.238 | Continuing | Continuing |
| 2010 Mine Replacement | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10.702 | Continuing | Continuing |
| Total | 3.828 | 1.986 | 3.210 | 3.019 | 3.065 | 3.121 | 3.168 | 13.940 | Continuing | Continuing |

(U) E. ACQUISITION STRATEGY:

NSWC CSS Panama City FL is teamed with other Navy activities and various contractors to design and develop the 2010 Mine as a replacement for the Mine MK56. Procurement is scheduled to start in FY09

(U) F. MAJOR PERFORMERS:

- NSWC, CSS, Panama City, FLA: Design and develop the 2010 Mine as a replacement for the Mine MK56.

R-1 SHOPPING LIST - Item No. 122

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

| Exhibit R-3 Cost Analysis (page 1) | | | | | | | | DATE: February 2003 | | | | |
|------------------------------------|------------------------|--------------------------------|----------------------------|------------|------------------|-------------------------|------------------|---------------------|------------------|------------------|------------|--------------------------|
| APPROPRIATION/BUDGET ACTIVITY | | | PROGRAM ELEMENT | | | PROJECT NUMBER AND NAME | | | | | | |
| RDT&E, N / BA-5 | | | 0604601N, Mine Development | | | Q0267, Mine Development | | | | | | |
| 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 |
| Primary Hardware Development | RCP | NWSC, CSS | 106.622 | | | | | 4.210 | 12/04 | Cont. | Cont. | N/A |
| Ancillary Hardware Development | | | 2.158 | | | | | | | | 2.158 | N/A |
| Ship Suitability | WR | NWSC, CSS | 1.057 | 0.422 | 12/02 | 0.455 | 12/03 | 0.486 | 12/04 | Cont. | Cont. | N/A |
| GFE | | | 4.790 | | | | | | | | 4.790 | N/A |
| | | | | | | | | | | | 0.000 | |
| | | | | | | | | | | | 0.000 | |
| | | | | | | | | | | | 0.000 | |
| | | | | | | | | | | | 0.000 | |
| | | | | | | | | | | | 0.000 | |
| | | | | | | | | | | | 0.000 | |
| Subtotal Product Development | | | 114.627 | 0.422 | | 0.455 | | 4.696 | | Cont. | 120.200 | |
| Remarks: | | | | | | | | | | | | |
| Software Development | WR | Various | 3.837 | 0.811 | 12/02 | 0.844 | 12/03 | 1.319 | 12/04 | Cont. | Cont. | N/A |
| Integrated Logistics Support | WR | NWSC, CSS | 0.220 | 0.050 | 12/02 | 0.050 | 12/03 | 0.150 | 12/04 | Cont. | Cont. | N/A |
| | | | | | | | | | | | 0.000 | |
| | | | | | | | | | | | 0.000 | |
| | | | | | | | | | | | 0.000 | |
| | | | | | | | | | | | 0.000 | |
| | | | | | | | | | | | 0.000 | |
| Subtotal Support | | | 4.057 | 0.861 | | 0.894 | | 1.469 | | 0.000 | 7.281 | |
| Remarks: | | | | | | | | | | | | |

UNCLASSIFIED

CLASSIFICATION:

| Exhibit R-3 Cost Analysis (page 2) | | | | | | | | | | DATE: February 2003 | | |
|------------------------------------|------------------------|--------------------------------|----------------------------|------------|------------------|-------------------------|------------------|------------|------------------|----------------------------|------------|--------------------------|
| APPROPRIATION/BUDGET ACTIVITY | | | PROGRAM ELEMENT | | | PROJECT NUMBER AND NAME | | | | | | |
| RDTE, N / BA-5 | | | 0604601N, Mine Development | | | Q0267, Mine Development | | | | | | |
| 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 |
| Developmental Test & Evaluation | WR | NWSC, CSS | 15.833 | | | | | | | Cont. | Cont. | N/A |
| Operational Test & Evaluation | WR | NWSC, CSS, COMOPTEVFOR | | | | | | | | Cont. | Cont. | N/A |
| | | | | | | | | | | | 0.000 | |
| | | | | | | | | | | | 0.000 | |
| | | | | | | | | | | | 0.000 | |
| | | | | | | | | | | | 0.000 | |
| | | | | | | | | | | | 0.000 | |
| Subtotal T&E | | | 15.833 | 0.000 | | 0.000 | | 0.000 | | 0.000 | 15.833 | |
| Remarks: | | | | | | | | | | | | |
| Government Engineering Support | | | 35.599 | | | | | | | | 35.599 | N/A |
| Program Management Support | Various | Various | 0.582 | 0.170 | 12/02 | 0.143 | 12/03 | 0.072 | 12/04 | Cont. | Cont. | N/A |
| Travel | PD | NAVSEA | | 0.005 | 12/02 | 0.005 | 12/03 | 0.010 | 12/04 | Cont. | Cont. | N/A |
| | | | | | | | | | | | 0.000 | |
| | | | | | | | | | | | 0.000 | |
| Subtotal Management | | | 36.181 | 0.175 | | 0.148 | | 0.082 | | 0.000 | 36.586 | |
| Remarks: | | | | | | | | | | | | |
| Total Cost | | | 170.698 | 1.458 | | 1.497 | | 6.247 | | Cont. | 179.900 | |
| Remarks: | | | | | | | | | | | | |

R-1 SHOPPING LIST - Item No. 122

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 8 of 10)

UNCLASSIFIED

CLASSIFICATION:

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|
| EXHIBIT R-4, Schedule Profile | | | | | | | | | | | | | | | | DATE: February 2003 | | | | | | | | | | | | | | | | |
| APPROPRIATION/BUDGET ACTIVITY RDT& E, N/BA-5 | | | | | | | | PROGRAM ELEMENT 0604601N, Mine Development | | | | | | | | R-1 ITEM NOMENCLATURE 0604601N, Mine Development | | | | | | | | | | | | | | | | |
| E. Schedule Profile | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MINE DEVELOPMENTS PROGRAM SCHEDULE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | FY 2002 | | | | FY 2003 | | | | FY 2004 | | | | FY 2005 | | | | FY 2006 | | | | FY 2007 | | | | FY 2008 | | | | FY 2009 | | | |
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| Events | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TDA Design/Development | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TDA Verification/Validation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Algorithm Design/Development | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Algorithm Verification/Validation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2010 Mine Analysis of Alternatives | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2010 Mine Requirements Analysis and Documentation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2010 Mine Design/Development | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2010 Mine Production | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

R-1 SHOPPING LIST - Item No. 122

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

[illegible]

R-1 SHOPPING LIST - Item No. 122

UNCLASSIFIED

Exhibit R-4a, Schedule Detail
(Exhibit R-4a, page 10 of 10)