

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. Contract ID Code
Cost Plus Fixed Fee

Page 1 Of 6

| | | | |
|---|--------------------------------|---|--------------------------------|
| 2. Amendment/Modification No. P00015 | 3. Effective Date 2013SEP25 | 4. Requisition/Purchase Req No. SEE SCHEDULE | 5. Project No. (If applicable) |
|---|--------------------------------|---|--------------------------------|

| | | | |
|--|----------------|--|----------------|
| 6. Issued By U.S. ARMY CONTRACTING COMMAND SHELLY MASAKOWSKI WARREN, MICHIGAN 48397-5000 HTTP://CONTRACTING.TACOM.ARMY.MIL EMAIL: SHELLY.MASAKOWSKI@US.ARMY.MIL | Code W56HZV | 7. Administered By (If other than Item 6) DCMA DETROIT 35803 MOUND ROAD STERLING HEIGHTS MI 48310 | Code S2305A |
|--|----------------|--|----------------|

| | | |
|--|-------------------------------------|---|
| 8. Name And Address Of Contractor (No., Street, City, County, State and Zip Code) GENERAL DYNAMICS LAND SYSTEMS INC. 38500 MOUND RD STERLING HEIGHTS, MI 48310-3200 | <input type="checkbox"/> | 9A. Amendment Of Solicitation No. |
| | <input type="checkbox"/> | 9B. Dated (See Item 11) |
| | <input checked="" type="checkbox"/> | 10A. Modification Of Contract/Order No. W56HZV-08-C-0422 |
| | <input type="checkbox"/> | 10B. Dated (See Item 13) 2008SEP25 |
| Code 7W356 | Facility Code | |

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in item 14. The hour and date specified for receipt of Offers

is extended, is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing items 8 and 15, and returning _____ copies of the amendments; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. **FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER.** If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. Accounting And Appropriation Data (If required)

NO CHANGE TO OBLIGATION DATA

**13. THIS ITEM ONLY APPLIES TO MODIFICATIONS OF CONTRACTS/ORDERS
It Modifies The Contract/Order No. As Described In Item 14.**

| | | |
|-------------------------------------|---|--|
| <input type="checkbox"/> | A. This Change Order is Issued Pursuant To: The Contract/Order No. In Item 10A. | The Changes Set Forth In Item 14 Are Made In |
| <input type="checkbox"/> | B. The Above Numbered Contract/Order Is Modified To Reflect The Administrative Changes (such as changes in paying office, appropriation data, etc.) Set Forth In Item 14, Pursuant To The Authority of FAR 43.103(b). | |
| <input checked="" type="checkbox"/> | C. This Supplemental Agreement Is Entered Into Pursuant To Authority Of: | |
| <input type="checkbox"/> | D. Other (Specify type of modification and authority) | |

E. IMPORTANT: Contractor is not, is required to sign this document and return _____ copies to the Issuing Office.

14. Description Of Amendment/Modification (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

SEE SECOND PAGE FOR DESCRIPTION

Except as provided herein, all terms and conditions of the document referenced in item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

| | | | |
|---|------------------|--|-------------------------------|
| 15A. Name And Title Of Signer (Type or print) | | 16A. Name And Title Of Contracting Officer (Type or print) LISA M. JONES LISA.M.JONES3@US.ARMY.MIL (586)282-6973 | |
| 15B. Contractor/Offeror (Signature of person authorized to sign) | 15C. Date Signed | 16B. United States Of America By _____ /SIGNED/ (Signature of Contracting Officer) | 16C. Date Signed 2013SEP25 |

| | | |
|---------------------------|--|--------------------|
| CONTINUATION SHEET | Reference No. of Document Being Continued | Page 2 of 6 |
| | PIIN/SIIN W56HZV-08-C-0422 MOD/AMD P00015 | |

Name of Offeror or Contractor: GENERAL DYNAMICS LAND SYSTEMS INC.

SECTION A - SUPPLEMENTAL INFORMATION

Buyer Name: SHELLY MASAKOWSKI
 Buyer Office Symbol/Telephone Number: CCTA-AHP-A/(586)282-4862
 Type of Contract: Cost Plus Fixed Fee
 Kind of Contract: Service Contracts
 Type of Business: Large Business Performing in U.S.
 Surveillance Criticality Designator: A
 Weapon System: Tank, M1 Abrams Family of Vehicles

*** End of Narrative A0000 ***

CURRENT AMOUNT: \$6,458,224.31
 THIS ACTION: 0.00
 NEW CONTRACT AMOUNT: \$6,458,224.31
 Prepared by: SMM

1. The purpose of this bi-lateral Modification P00015 to contract W56HZV-08-C-0422 is to extend the period of performances on Work Directives MAP-1, MAP-2, MAP-3 and MAP-5.
2. Work Directive Supplements are as follows:

 MAP-1 Supplement 7 extends the period of performance from 30 September 2013 to 30 January 2014.

 MAP-2 Supplement 6 extends the period of performance from 30 September 2013 to 30 October 2013.

 MAP-3 Supplement 7 extends the period of performance from 30 September 2013 to 30 December 2013.

 MAP-5 Supplement 5 extends the period of performance from 30 September 2013 to 30 January 2014 and also adds a requirement to deliver a comprehensive report of Government Furnished Equipment (CDRL A005) located at both JSMC-Lima and GDLS-Scranton manufacturing sites.
3. Contractor is authorized to invoice SLIN 0001AN for MAP-5, Supplement 5.
4. As a result of this action the following attachments have been revised:

 Attachment 0001, MAP-1, has been updated to incorporate Supplements #7.
 Attachment 0002, MAP-2, has been updated to incorporate Supplements #6.
 Attachment 0003, MAP-3, has been updated to incorporate Supplements #7.
 Attachment 0005, MAP-5, has been updated to incorporate Supplements #5.
 SLINs 0001AN, 0003AD and 0003AE performance completion dates updated.
5. Per Modification P00015, there are no changes to manhours, material, or travel on the Work Directives listed above.
6. As a result of this modification the total contract amount is not increased nor decreased.
7. All other terms and conditions, except those addressed in this modification, remain unchanged and in full force and effect.

*** END OF NARRATIVE A0016 ***

Name of Offeror or Contractor: GENERAL DYNAMICS LAND SYSTEMS INC.

| ITEM NO | SUPPLIES/SERVICES | QUANTITY | UNIT | UNIT PRICE | AMOUNT | | | | | | | | | |
|---------------|--|-------------|------|------------|---------------|-----------------|-------------|-----|---|-------------|---|----|--|---------------|
| | SECTION B - SUPPLIES OR SERVICES AND PRICES/COSTS | | | | | | | | | | | | | |
| 0001 | ABRAMS MAP-1 AND MAP | | | | | | | | | | | | | |
| 0001AN | <p><u>OPTION HOURS FOR MAP 1 & 2</u></p> <p>GENERIC NAME DESCRIPTION: ABRAMS MAP-1 AND MAP CLIN CONTRACT TYPE: Cost Plus Fixed Fee PRON: 472SPU6247 PRON AMD: 02 ACRN: AN AMS CD: 31206500014 PSC: 2350</p> <p>**Per Modification P00015 MAP-1, MAP-2 and MAP-5 Work Directives have been updated to reflect the following:</p> <p>MAP-1 Supplement 7: Extend period of performance from 30 September 2013 to 30 January 2014. No change in budget.</p> <p>MAP-2 Supplement 6: Extend period of performance from 30 September 2013 to 30 October 2013. No change in budget.</p> <p>MAP-5 Supplement 5: Add CDRL A005 and extend period of performance from 30 September 2013 to 30 January 2014. No change in budget.</p> <p>(End of narrative B002)</p> <p><u>Inspection and Acceptance</u> INSPECTION: Origin ACCEPTANCE: Origin</p> <p><u>Deliveries or Performance</u></p> <table border="0"> <tr> <td>DLVR SCH</td> <td></td> <td>PERF COMPL</td> </tr> <tr> <td><u>REL CD</u></td> <td><u>QUANTITY</u></td> <td><u>DATE</u></td> </tr> <tr> <td>001</td> <td>1</td> <td>30-JAN-2014</td> </tr> </table> <p>\$ 913,500.00</p> <p>** Updated per Modification P00015.</p> <p>(End of narrative F001)</p> | DLVR SCH | | PERF COMPL | <u>REL CD</u> | <u>QUANTITY</u> | <u>DATE</u> | 001 | 1 | 30-JAN-2014 | 1 | LO | | \$ 913,500.00 |
| DLVR SCH | | PERF COMPL | | | | | | | | | | | | |
| <u>REL CD</u> | <u>QUANTITY</u> | <u>DATE</u> | | | | | | | | | | | | |
| 001 | 1 | 30-JAN-2014 | | | | | | | | | | | | |
| 0003 | MAP 3 CLIN | | | | | | | | | | | | | |

CONTINUATION SHEET

Reference No. of Document Being Continued
 PIIN/SIIN W56HZV-08-C-0422 MOD/AMD P00015

Name of Offeror or Contractor: GENERAL DYNAMICS LAND SYSTEMS INC.

| ITEM NO | SUPPLIES/SERVICES | QUANTITY | UNIT | UNIT PRICE | AMOUNT | | | | | | |
|---------------|---|----------|------------|---------------|-----------------------------|-----|------------------------------------|---|----|--|---------------|
| 0003AD | <p><u>OPTION MAP 3 HOURS-JSMC MODERNIZATION STUDY</u></p> <p>GENERIC NAME DESCRIPTION: MAP 3 CLIN CLIN CONTRACT TYPE: Cost Plus Fixed Fee PRON: 472SPU6347 PRON AMD: 03 ACRN: AN AMS CD: 31206500014 PSC: 2350</p> <p>**Per Modification P00015 Supplement 7 to MAP-3 Work Directive was added to extend the period of performance from 30 September 2013 to 30 December 2013. No change in budget.</p> <p>(End of narrative B002)</p> <p><u>Inspection and Acceptance</u> INSPECTION: Origin ACCEPTANCE: Origin</p> <p><u>Deliveries or Performance</u></p> <table border="0"> <tr> <td>DLVR SCH</td> <td>PERF COMPL</td> </tr> <tr> <td><u>REL CD</u></td> <td><u>QUANTITY</u> <u>DATE</u></td> </tr> <tr> <td>001</td> <td>1 30-DEC-2013</td> </tr> </table> <p>\$ 517,193.25</p> <p>** Updated per Modification P00015.</p> <p>(End of narrative F001)</p> | DLVR SCH | PERF COMPL | <u>REL CD</u> | <u>QUANTITY</u> <u>DATE</u> | 001 | 1 30-DEC-2013 | 1 | LO | | \$ 517,193.25 |
| DLVR SCH | PERF COMPL | | | | | | | | | | |
| <u>REL CD</u> | <u>QUANTITY</u> <u>DATE</u> | | | | | | | | | | |
| 001 | 1 30-DEC-2013 | | | | | | | | | | |

CONTINUATION SHEET

Reference No. of Document Being Continued
 PIIN/SIIN W56HZV-08-C-0422 MOD/AMD P00015

Name of Offeror or Contractor: GENERAL DYNAMICS LAND SYSTEMS INC.

| ITEM NO | SUPPLIES/SERVICES | QUANTITY | UNIT | UNIT PRICE | AMOUNT | | | | | | | | | | |
|---------------|---|----------|------------|---------------|-----------------|-----|---|--|-------------|--|-------------|---|----|--|---------------|
| 0003AE | <p>MAP - 3 OPTION HOURS JSMC LIMA FACILITY</p> <p>GENERIC NAME DESCRIPTION: MAP 3 CLIN CLIN CONTRACT TYPE: Cost Plus Fixed Fee PRON: 472SPU6347 PRON AMD: 03 ACRN: AN AMS CD: 31206500014 PSC: 2350</p> <p>**Per Modification P00015 Supplement 7 to MAP-3 Work Directive was added to extend the period of performance from 30 September 2013 to 30 December 2013. No change in budget.</p> <p>(End of narrative B002)</p> <p><u>Inspection and Acceptance</u> INSPECTION: Origin ACCEPTANCE: Origin</p> <p><u>Deliveries or Performance</u></p> <table border="0"> <tr> <td>DLVR SCH</td> <td>PERF COMPL</td> </tr> <tr> <td><u>REL CD</u></td> <td><u>QUANTITY</u></td> </tr> <tr> <td>001</td> <td>1</td> </tr> <tr> <td></td> <td><u>DATE</u></td> </tr> <tr> <td></td> <td>30-DEC-2013</td> </tr> </table> <p>\$ 304,500.00</p> <p>** Updated per Modification P00015.</p> <p>(End of narrative F001)</p> | DLVR SCH | PERF COMPL | <u>REL CD</u> | <u>QUANTITY</u> | 001 | 1 | | <u>DATE</u> | | 30-DEC-2013 | 1 | LO | | \$ 304,500.00 |
| DLVR SCH | PERF COMPL | | | | | | | | | | | | | | |
| <u>REL CD</u> | <u>QUANTITY</u> | | | | | | | | | | | | | | |
| 001 | 1 | | | | | | | | | | | | | | |
| | <u>DATE</u> | | | | | | | | | | | | | | |
| | 30-DEC-2013 | | | | | | | | | | | | | | |

CONTINUATION SHEET**Reference No. of Document Being Continued****Page 6 of 6****PIIN/SIIN** W56HZV-08-C-0422**MOD/AMD** P00015**Name of Offeror or Contractor:** GENERAL DYNAMICS LAND SYSTEMS INC.

SECTION J - LIST OF ATTACHMENTS

| <u>List of</u> <u>Addenda</u> | <u>Title</u> | <u>Date</u> | <u>Number</u> <u>of Pages</u> | <u>Transmitted By</u> |
|----------------------------------|---------------------------------|-------------|----------------------------------|-----------------------|
| Exhibit A | CONTRACT DATA REQUIREMENTS LIST | | | |
| Attachment 0001 | WORK DIRECTIVE MAP-1 | | | DATA |
| Attachment 0002 | WORK DIRECTIVE MAP-2 | | | DATA |
| Attachment 0003 | WORK DIRECTIVE MAP-3 | 07-SEP-2011 | 006 | DATA |
| Attachment 0005 | WORK DIRECTIVE MAP-5 | 06-JUN-2011 | 002 | DATA |

KEITH.W.ROSENAU.CIV@MAIL.MIL

15. TOTAL: Four (4)

16. REMARKS:

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Block 12 and 13: A draft report will be delivered no later than 30 December 2013 in accordance with CRDL A005. The Government will have two weeks to review and submit changes. Then GDLS will have one week to make revisions and submit the final report.

ENGINEERING WORK DIRECTIVE

CATEGORY: Mfg Analysis Planning (MAP)

ENGINEERING CONTRACTOR:
General Dynamics Land Systems Division

W.D. NUMBER: MAP-1 Supplement#7

DATE: 17 September 2013

END ITEM(s) AFFECTED: M1/EFV Series
SUBJECT: Program Control

CONTRACT NO: W56HZV-08-C-0422
PRIORITY: CLIN: 0001

| SOW | CDRL No | DID |
|--|---------|-----|
| C.1, C.2.1, C.2.2, C.2.3, C.3.1,C.4, C.5, C.8, C.9, C.10 | | |

TASK SUMMARY

Manage necessary actions which will ensure proper project coordination and administration, provide required supporting activities, and accomplish financial management efforts.

TASK DESCRIPTIONS

1. Project Management and Administration.

- a. Manage and control the resources necessary to insure timely achievement of all the requirements of this contract in the most economical manner to the extent required by mutually agreed upon work directives.
- b. Provide administrative support to the Program Manager (PM) Heavy Brigade Combat Team (HBTC) for selected Government briefings and presentations as required.

2. Program Reviews:

In coordination with the Program Manager's Office, conduct monthly program reviews (2nd Monday) to address projects assigned to this contract as well as any additional areas deemed necessary by the Government or the Contractor. Provide a status report prepared in accordance with Data Item DI-MGMT-80368 at these reviews.

3. Data Management:

Maintain a Management Information System that are compatible with unique Government information requirements and format.

4. Contract Data Requirements:

- a. Provide a data management system for planning, organizing, directing, coordinating and controlling all contract data items.
- b. Prepare, reproduce, assemble, package and deliver data items as specified in the Contract Data Requirements List (DD Form 1423).

5. Financial Management:

- a. Prepare and maintain the necessary contract status data to evaluate cost, schedule and technical status of the Contract, including status of subcontractor work directives.
- b. Provide briefings and documents necessary to explain and describe the internal procedures used on the contract to the Government manager or designated representative visiting the facility.
- c. Prepare a monthly Performance and Cost Report in a concise management summary format describing the current technical and financial status of the contract. The report should be prepared in accordance with Data Item DI-FMCL-80912 and submitted to the Government within 30 working days.

6. Contract Work Breakdown Structure:

Use work directives to provide the CWBS framework for contract planning, budgeting and reporting status of cost and schedule to the customer.

7. Work Directives:

- a. Prepare W.D.'s and submit to the Contracting Officer through the Technical Representative (COTR).
- b. Provide initial cost estimates, including type and amount of labor required for accomplishment of new W.D.'s.
- c. Prepare supplemental work directives denoting additions, deletions or revisions to the original work directive.

8. Period of Performance:

Period of performance will be 12 months from contractual award.

9. Budget:

The Contractor shall not exceed the following maximum expenditures in the performance of this Work Directive.

Manhours: 1,000
Material: \$0.00
Travel: \$1,500

Reason for Supplement 1

Is to increase budgeted hours by 2,300 from 1,000 to 3,300 and converted a portion of the associated hours to travel. In addition extended period of performance through year-end Dec.31,2009

Manhours: 3,300 Was 1,000
Material: \$0.00 No Change
Travel: \$4,500 Was \$1,500

Reason for Supplement 2

Is to extended period of performance from Dec.31,2009 through September 30,2010

Manhours: 3,300 No Change
Material: \$0.00 No Change
Travel: \$4,500 No Change

Reason for Supplement 3

Is to increase budgeted hours by 1,800 from 3,300 to 5,100. In addition to extending period of performance through year-end Sept.30, 2011

Manhours: 5,100 Was 3,300
Material: \$0.00 No Change
Travel: \$4,500 No Change

Reason for Supplement 4

Is to increase budgeted hours by 579 from 5,100 to 5,679. These hours are being trasfered from MAP-4 Work Directive.

Manhours: 5,679 Was 5,100
Material: \$0.00 No Change
Travel: \$4,500 No Change

Reason for Supplement 5

Is to increase budgeted hours by 1,456.7 from 5,680 to 6,556.7 and to extend the period of performance through September 30, 2012.

Manhours: 7,136.7 Was 5,680
Including:
Material: \$0.00 No Change
Travel: \$4,500 No Change

Reason for Supplement 6 (4/4/12)

Is to increase budgeted hours by 3,000 from 7,136.7 to 10,136.7 and to extend the period of performance through September 30, 2013.

Manhours: 10,136.7 Was 7,136.7
Including:
Material: \$0.00 No Change
Travel: \$4,500 No Change

*Reason for Supplement 7 (9/17/13)

Is to extend the period of performance from 30 September 2013 to 30 January 2014.

Manhours: 10,136.7 No Change
Including:
Material: \$0.00 No Change
Travel: \$4,500 No Change

APPROVALS:

_____/s/_____
Andrea Ballantine
COTR

_____/s/_____
Lisa M. Jones
CONTRACTING OFFICER

*Work Directive MAP-1, Supplement #7 incorporated via Modification P00015.

ENGINEERING WORK DIRECTIVE

CATEGORY: Mfg. Analysis Planning (MAP)

ENGINEERING CONTRACTOR:
General Dynamics Land Systems Division

W.D. NUMBER: MAP-2 Supplement #6

DATE: 17 September 2013

END ITEM(S) AFFECTED: M1/EFV Series
SUBJECT: Five Yr. Facilities Plan

CONTRACT NO: W56HZV-08-C-0422
PRIORITY: CLIN: 0001

| SOW | CDRL No | DID |
|--|---------|-----|
| C.2.1, C.2.1.1, C.2.1.2, C.2.1.3, C.2.1.4, C.2.1.5, | | |

TASK SUMMARY

This Work Directive establishes the effort required to maintain a five-year plan that will assist the Program Manager in planning the utilization of Abrams tank production facilities. The intent of this effort is to create and maintain a current projection of facilitization requirements for the Heavy Brigade Combat Team Abrams Production Program in a manner that will support capital investment decisions. The plan will provide the facilities requirements for the Muskegon Operations, the JSMC - Lima Army Tank Plant, and the Scranton Defense Plant, and the Sterling Defense Plant. These requirements are defined as equipment rehabilitation and replacement, minor facility maintenance, repair and construction as well as major construction performed under the direction of the Corps of Engineers. Supporting documentation (including but not limited to: DD Form 1391's, PDB's, and P-25's) for these projects will be prepared as a part of this Work Directive.

TASK DESCRIPTIONS

1. The contractor will provide qualitative and quantitative technological analyses of Facilities Requirements as follows:
 - a. Determine and validate all Five-Year Facilities Requirements for each GDLS Plant.
 - b. Coordinate the Five-Year Facilities Requirements Plan for each plant with Government representatives at plant level.
 - c. Coordinate the Division level Five-Year Facilities Requirements Plan with Government representatives at the Program Managers Office level.
 - d. Maintain/update/revise Division and plant Five-Year Plan as required.
 - e. Provide planning, programming and budget documents as required to execute the Five-Year Plan.
2. Preparation of Project Documentation:
 - a. Prepare appropriate Government forms for each project.
 - b. Develop GDLS Division-wide priority position.
3. Data Items:
 - a. Quarterly reviews will be conducted to discuss results and questions that arise from the effort performed under this Work Directive and to exchange technological information and data.
 - b. The Five-Year Plan will be submitted annually on the first business day of October and will be used as a master agenda for a yearly On-Site Review with additional updates and reviews as needed. The Plan will be in accordance with MIL-STD-847B and DI-MISC-80711 or other suitable format approved by the COTR.
4. Period of Performance:

Period of performance will be 12 months from contractual award.
5. Budget:

| | |
|-----------|------------|
| Manhours: | 1,900 |
| Travel | \$3,000.00 |
| Material | \$500.00 |

Reason for Supplement 1

Is to increase budgeted hours by 3,795 from 1,900 to 5,695 and converted a portion of the associated hours to travel. In addition extended period of performance through year-end Dec.31, 2009

| | |
|-----------|---------------------|
| Manhours: | 5,695 Was 1,900 |
| Material: | \$500 No Change |
| Travel: | \$6,500 Was \$3,000 |

Reason for Supplement 2

Is to extended period of performance from Dec. 31, 2009 through September 30, 2010

Manhours: 5,695 No Change
Material: \$500 No Change
Travel: \$6,500 No Change

Reason for Supplement 3

Is to increase budgeted hours by 4,700 from 5,695 to 10,395 In addition to extending period of performance through Sept. 30, 2011

Manhours: 10,395 Was 5,695
Material: \$500 No Change
Travel: \$6,500 No Change

Reason for Supplement 4

Is to increase budgeted hours by 2,000 from 10,395 to 12,395 and to extend the period of performance through 30 September 2012.

Manhours: 12,395 Was 10,395
Material: \$500 No Change
Travel: \$6,500 No Change

Reason for Supplement 5 (4/4/12)

Is to increase budgeted hours by 3,000 from 12,395 to 15,395 and to extend the period of performance through 30 September 2013.

Manhours: 15,395 Was 12,395
Material: \$500 No Change
Travel: \$6,500 No Change

*Reason for Supplement 6 (9/17/13)

Is the extend the period of performance from 30 September 2013 to 30 October 2013.

Manhours: 15,395 No Change
Material: \$500 No Change
Travel: \$6,500 No Change

APPROVALS:

_____/s//_____
Andrea Ballantine
COTR

_____/s//_____
Lisa M. Jones
CONTRACTING OFFICER

*Work Directive MAP-2, Supplement #6 incorporated via Modification P00015.

ENGINEERING WORK DIRECTIVE

CATEGORY, Mfg Analysis Planning (MAP)

ENGINEERING CONTRACTOR
General Dynamics Land Systems Division

W.D. Number: MAP-3 Supplement #7

Date: 17 September 2013

END ITEM(s) AFFECTED: MIA2 SEP Series
SUBJECT: AIM/SEP Assessment

CONTRACT No: W56HZV-08-C0422
PRIORITY: CLIN: 0003

SOW
C2.3.6, C.3.3.7, C.2.3.8, C.2.3.10

CDRL No

DID

TASK SUMMARY

Effort required for GDLS to identify the effects on their current Planning based on SEP/AIM Production completing in 2013 and Starting up in 2016 LRIP / 2017 Production.

The following assumptions are assumed for planning purposes.

Current schedules for all other programs other than AIM/SEP are currently as planned as of this Work Directive Date (e.g. Egypt ends at Inc 10).

Examples of items to consider as part of this assessment are as follows:

- Shut Down Cost / Restart Cost/ Manpower-Bumping/Loss/Etc
- Machine Lay-A- Way Costs and Re-Start Costs
- Facility Costs
- Quality Issues related to Component re-qualification costs e.g. IPT, Qual., CT, etc:
 - SCM has estimated that there would be approx. 417 new suppliers that would need to be qualified via SQA survey's (Old suppliers would either have gone out of business or moved on with other product lines).
 - Inspection Delegation training at new suppliers, retraining of ID delegates or replacements at incumbent suppliers.
 - First piece inspections of each Abrams part provided by suppliers which applies to both new and incumbent suppliers.
 - Hiring and training of new QA Field Representatives.
 - Current Abrams Contract required FAT's would have to be redone to include GPS.
- Manpower /Skill Loss /Layoff Costs /Training Cost /Re-Training Costs (All GD Facilities)
- Supply Chain
- Cost Impact to other programs
- Fleet Sustainment /Spares Availability CosT
- Anniston Support
- Saudi Impact
- Federal Supply System Impact
- STS /Obsolescence
- Logistics /Services Support
- Depot and GFE impact to be looked at by PM

The work is to assess the impact to General Dynamics Land Systems (GDLS) facilities, resources, and vendors because of the delay of AIM/SEP programs. Therefore, GDLS shall provide a potential program impact assessment against the current force. The impact assessment will center on program supportability pertaining to design, current manufacturers, suppliers, manufacturing, and logistics, by the affected GDLS and supporting commercial and Organic Base facilities.

The affected programs include (e.g.):

- Abrams (Family of vehicles (FOV)
- Stryker - Family of vehicles (FOV)
- Wolverine
- USMC Programs (BFV, LAV)
- FMS (Egypt and other potential program Support)
- etc

This impact assessment will include, but will not be limited to, the following General Dynamics Facilities:

- JSMC
- Scranton operations
- GDAO (Anniston)
- Tallahassee Operations

- Major GD suppliers
- General Dynamics will decide who to include.

The impact assessment will consider or address impacts on the remaining current force systems and related components, to include cost, if applicable:

- Skills
- Direct Labor hour impact by facility
- Supplier base
- Ability to maintain core design and logistics base skills
- Ability to retain critical skills (manufacturing and engineering)
- Ability to maintain direct labor hours to maintain current production capacities, machine loads, and facilities
- List of critical sole source component, spare parts (NSN / PN)
- Time phased workload graph before and after restructuring/cessation
- Manufacturing base issues resulting from weapons system cessations
- Provide proposed actions to mitigate impacts

GROUND RULES AND ASSUMPTIONS:

1. All estimates are based on ROM cost accuracy (+/-25%).
2. Consider any direct sales (vs. FMS) opportunities.
3. Utilize FY 08 POM and GDLS Product Schedule.
4. Information to be provided as a result of this work directive shall be similar to the information and format as per TACOM Brief dated 16 June 2003.

PERIOD OF PERFORMANCE:

Period of Performance shall be 12 Months from Contract Award.

Budget:

| | |
|-----------|--------------|
| Manhours: | 7,976 |
| Material: | \$340,000.00 |
| Travel: | \$42,400.00 |

Reason for Supplement 1

Extended Period of Performance from 12 months after contract award, to Dec. 31, 2009. In addition to correcting Work Directive, Budget to agree with contract budget.

Budget:

| | |
|-----------|------------------------------|
| Manhours: | 3,776.93 Was 7,976 |
| Material: | \$20,000.00 Was \$340,000.00 |
| Travel: | \$22,400.00 Was \$ 42,000.00 |

Reason for Supplement 2

Is to extended period of performance from Dec. 31, 2009 through September 30, 2010

| | |
|-----------|-------------------------|
| Manhours: | 3,776.93 (No Change) |
| Material: | \$20,000.00 (No Change) |
| Travel: | \$22,400.00 (No Change) |

Reason for Supplement 3

Is to extended period of performance from September 30, 2010 to September 30, 2011

| | |
|-----------|-------------------------|
| Manhours: | 3,776.93 (No Change) |
| Material: | \$20,000.00 (No Change) |
| Travel: | \$22,400.00 (No Change) |

Reason for Supplement 4

The purpose of this supplement is to initiate work on updating the April 2010 Industrial Base Study to assess the impact to General Dynamics Land Systems (GDLS) facilities, resources, and vendors to determine the effects of a Cold Base shutdown.

The study will be updated to determine the following:

- 1) What is the timeline and the costs associated with the restart of Abrams production to achieve Job #1 from a cold base and warm base (Vehicle Cost)? Should minimally include:

- a) Long lead material time and cost?
 - b) Manufacturing skills hiring and training time & cost?
 - c) Qualification times and cost?
 - d) Supplier qualification times and cost?
 - e) Government owned facilities and equipment start up costs?
 - f) Engineering skills hiring and training time and cost?
- 2) What vendors will be permanently lost during a cold base shutdown?
- a) Name and location of vendor?
 - b) Components provided by vendor?
 - c) GDLS backup plan and cost to replace vendor?
 - d) What is their MSR?
 - e) What is the impact to spares?
- 3) What manufacturing/engineering processes and skills will be permanently lost during a cold base shutdown?
- a) What processes are lost?
 - b) What manufacturing skills are lost? Why are they critical skills?
 - c) What engineering skills are lost?
 - d) GDLS backup plan to replace?
- 4) How much of the Abrams industrial base stays warm due to commercial, FMS, or other types of work?
- a) Which processes stay warm?
 - b) Which processes go cold?
- 5) What is the Abrams Minimum Sustaining Rate (MSR) by vehicle equivalent and man-hours? What is the Abrams Minimum Economical Sustaining Rate (MESR) by vehicle equivalent and man-hours? To enable the Army to acquire a better grasp on your MSR, provide a Cost/Quantity curve chart, reflecting unit prices against various levels of production surrounding the MSR. Provide supporting documentation.
- 6) What is the cost to layaway and sustain government owned equipment at GDLS operated facilities during a cold base shutdown (JSMC, Scranton) and warm base (JSMC, Scranton)?
- Identify GFE (IPE, STTE, OPE) assigned to GDLS for the Abrams program
 - Identify future use equipment (for future programs) to be laid away, to include the Government tag numbers.
 - Identify non-essential equipment to be excessed.
 - Identify buildings to be laid away (distinguish between total facility layaway and partial facility layaway).
 - Identify costs associated with layaway/restart, to include maintenance and upkeep for facilities and equipment
 - Identify any vendors requiring layaway.
- 7) What is the impact on support services (i.e., fielding teams, fielding supply support, logistics critical skills)?
- 8) What is the impact on GDLS sub-component repair parts program support of ANAD?

GROUND RULES & ASSUMPTIONS:

- a) Information to be provided shall be similar to the information and format as per TACOM Brief dated April 2010
- b) Remove EFV from schedule
- c) Cold Base Gap Period: CY2013 (mid year)- CY2016
- d) Restart to occur in CY2017
- e) System Technical Support will be funded to a level sufficient to support the engineering skill base required during that period
- f) Support Services will continue to provide fleet maintenance. Required ED&D support, supply chain, and production spares will be provided
- g) Layaway Equipment in place and costs to be broken out by program
- h) Locations assessed same as the April 2010 Study
- i) GDLS to determine major suppliers to include and criteria for determination
- j) Depot & non-GDLS GFE impacts will be performed by TACOM PM

- k) Consider any direct sales (vs. FMS) opportunities
- l) Cold Base / Shutdown: zero production
- m) Warm Base: Defined as MSR / MESR product being produced
- n) Impact analysis based on the production program schedules as agreed to jointly by GDLS and the government
- o) The study shall identify the ROM cost accuracy
- p) MSR is defined as the absolute minimum production level to sustain the supply base. Below the MSR, suppliers will go out of business or otherwise leave the market.
- q) MESR is higher than the MSR and is the rate at which the vehicle production cost would be significantly reduced. GDLS is to determine what a significant price reduction would be.
- r) Costs that should be internal to GDLS shall not be included in the general costs, but shall be detailed separately:
 - Layoff costs
 - Rehire costs
 - Contract termination costs
- s) Any costs associated with the Armor Room (Bldg 351) shall be detailed separately and not included in the other cost calculations.
- t) Survey Questionnaire distributed to GDLS supply base shall include the following:
 - Please list your top three defense customers
 - Defense Customer #1 Name of Customer:
 - Defense Customer #1 Program Supported:
 - Defense Customer #2 Name of Customer:
 - Defense Customer #2 Program Supported:
 - Defense Customer #3 Name of Customer:
 - Defense Customer #3 Program Supported:
 - What percent of your overall manufacturing operations are currently supporting military orders?
 - % Army
 - % Navy
 - % Air Force
 - % Marines
- u) GDLS / TACOM to visit jointly with mutually agreed upon GDLS suppliers surveyed to review non-proprietary results (approximately 10-20 suppliers). Suppliers, locations, travel times and durations will be mutually agreed upon by USG and GDLS.

REPORTING:

A status update is required on a monthly basis, to include hours expended, percent complete, and any specific questions raised by the PM (TBD).

DELIVERABLE:

- GDLS shall provide a formal briefing of the results 120 days after funding is provided.
- Information to be provided shall be similar to the information and format as per TACOM Brief dated April 2010.
- Full report is due 150 days after funding is provided.
- GDLS shall provide 5 paper copies and 10 copies on CD.

Period of Performance: Complete by 30 September 2012.

Manhours: 6,705.93 Was 3,776.93
Including:
Travel: \$124,986.00 Was \$22,400.00
Material: \$1,000.00 Was \$20,000.00

*Reason for Supplement 5

Is to develop a Modernization Plan, for the Joint Systems Manufacturing Center, (JSMC), Lima Ohio. The funding required to perform this scope will require increasing the Work Directives Hours/Dollars, by 3,397Hours/\$517,200 and extending contract period of performance through September 30, 2013.

- 1. Task Objectives:
 - 1.1 Develop a facility modernization plan for the Joint Systems Manufacturing Center (JSMC) in Lima, OH with the objective of creating a more lean, efficient, and flexible manufacturing facility.
 - 1.2 Both the facility infrastructure and IPE Plant Equipment (Government-owned equipment (GFE) and GDLS Owned)

shall be analyzed. Costs will be broken out by GFE and GDLS owned.

1.3 Each piece of GFE should be recommended for either (1) status quo, (2) Repair (3) refurbishment, (4) replacement, or (4) disposal, with an ROM cost estimate for the action recommended. If equipment is recommended for replacement, a cost should be estimated for the removal and disposal/sale of the old equipment.

1.4 The recommended infrastructure projects shall include, but are not limited to:

- a. concrete replacement
- b. roof replacement
- c. railroad repairs
- d. sewer/underground utilities work
- e. restroom upgrades
- f. test track improvements
- g. electrical improvements
- h. ideas presented by the Lean Six Sigma team at GDLS
 - i. room occupancy sensors
 - ii. insulate equipment
 - iii. recover process heat
 - iv. air leak testing
 - v. Recommendations from the University of Michigan Energy Audit (funded through the Department of Energy (DOE))

1.5 Each project should indicate the estimated lead time to implement.

1.6 The recommended projects shall meet one of the following criteria:

- a. Repair existing equipment and or facility infrastructure.
- b. Reduce and or improve energy efficiency and or usage.
- c. Improve environmental impact
- d. Improve production efficiencies and/or improve capability.

1.7 Each project shall be categorized as either a need, want, or wish item with a description of why the item is categorized this way.

1.7.1 A need item is an item recommended for repair and/or replacement due to age, disrepair and inability to fully repair, or inability to economically keep the equipment/item functioning, and can be used to improve current and/or future production of USG Program Office vehicles (Abrams, Stryker, FMS, etc.)

1.7.2 A want item is an item that is functioning as it is intended, but is recommended for replacement due to more efficient technology being available, a desire to expand capacity or capability, and is required for future production of the Abrams tank vehicles or future heavy combat vehicles.

1.7.3 A wish item is an improvement or replacement that is above and beyond a need or want item.

1.8 If a project should result in a long-term cost reduction or cost avoidance, an estimate of that savings (if any) shall be provided for each project. GDLS is to determine if the cost savings should be shown as \$/year or \$/vehicle (it may be different for each project).

2. Ground Rules/Assumptions:

2.1. The work recommended under this study (replacement or repair projects), if funded, will be performed during the Abrams gap period from June 2014 to June 2017.

2.2. The scope is not focused on the Abrams program alone. It is focused on the JSMC facility and the current products that are produced at JSMC.

2.3. This project should not recommend new equipment for future programs if there is no need for the new equipment for existing programs. (in other words, we are not modernizing JSMC for potential future programs unless it is a byproduct of modernizing for existing programs.)

2.4. There is no limitation on the cost or the number of projects that can be recommended in this study, as long as the project meets the criteria noted in 1.6.

3. Deliverables:

3.1. Brief

3.1.1. A brief of the final results is due 150 days after the project is funded.

3.2. Written Report

3.2.1. A final written report is due 180 days after the project is funded. The written report is to be provided on CD. A minimum of five (5) copies of the report on CD are required.

3.2.2. The report shall include:

- a. A listing of each piece of GFE and the recommended action for that piece of equipment (paragraph 1.3).
- b. A list of all infrastructure projects recommended.
- c. The cost to complete the action recommended for each project (both infrastructure and equipment).
- d. An overall timeline showing (1) when funding will be required in order to begin the recommended actions and (2) when the projects will be complete (if funded on time).

3.3. Monthly face-to-face status reviews are required with the COTR and other government employees as invited by the COTR.

Period of Performance: WD MAP-3 Supplement #5, 180 days from contract award.
Period of Performance Contract: September 30, 2013 Was September 30, 2012
Budget: Supplement #5

Man-hours: 10,102.93 was 6,705.93 Delta 3,397
Including:
Travel: \$154,986.00 was \$124,986.00 Delta \$30,000.00
Material: \$1,000 No change

Reason for Supplement #6

Increase budgeted hours by 2,000 from 10,102.93 to 12,102.93.
Period of Performance: September 30, 2013 No Change
Budgeted: Supplement #6

Man-hours: 12,102.93 Was 10,102.93
Including:
Travel: \$154,986.00 No Change
Material: \$1,000 No Change

*Reason for Supplement #7

Is to extend the period of performance from 30 September 2013 to 30 December 2013.

Man-hours: 12,102.93 No Change
Including:
Travel: \$154,986.00 No Change
Material: \$1,000 No Change

APPROVALS:

_____/s/_____
Andrea Ballantine
COTR

_____/s/_____
Lisa M. Jones
CONTRACTING OFFICER

*Work Directive MAP-3, Supplement #7 incorporated via Modification P00015.

ENGINEERING WORK DIRECTIVE

CATEGORY: Mfg Analysis Planning (MAP)

ENGINEERING CONTRACTOR:
General Dynamics Land Systems Division

W.D. NUMBER: MAP-5 Supplement #5

DATE: 19 September 2013

END ITEM(s) AFFECTED: M1A2 Series
SUBJECT: Industrial Base Assessment

CONTRACT NO: W56HZV-08-C-0422
PRIORITY: CLIN: 0001

SOW CDRL No DID

TASK SUMMARY

This Work Directive establishes the initial funding level of effort required for GDLS to assist PM Abrams in replying to industrial base inquires and the associated impacts on current production planning.

TASK DESCRIPTIONS

The work scope is to assess the impacts on program planning associated with production quantity changes and their effects on program manufacturing costs such as machine layaway, manpower, training, etc. that may result as production quantities change at the Joint Systems Manufacturing Center Lima (JSMC-Lima) and Scranton Defense Plant.

1. Attend PM Abrams TACOM Industrial Base Operation meetings or teleconferences as required for updates.
2. Provide assessments associated with the program impacts resulting from production quantity changes that could result in the layaway of Abrams Production Lines or equipment at both JSMC-Lima and the GDLS Scranton Defense Plant. Impact assessments should address areas such as production support labor, core manufacturing operations, and associated equipment layaway that may be required.
3. Cold base restart analysis - Identify the associated lead times and costs required to re-start Abrams production from a cold base. Consider items such as requalification testing, supply chain management, training, skilled labor, lead times, etc. that might be required with bringing Abrams production back online from a cold base.
4. As the study scopes are defined, GDLS shall provide an estimate to include man hours required to accomplish each objective.

Period of Performance:

Deliverable: Start Date: 28 September 2009 Completion Date: 28 September 2010

Manhours: 1104.581
Material: \$ 0
Travel: \$ 2,000

Reason for Supplement 1

Is to increase budgeted hours by 3,231.04 from 1,104.581 to 4,335.62. In addition to extending period of performance from September 28, 2010 to September 30, 2011.

Manhours: 4,335.62 Was 1,104.581
Material: \$ 0 (No Change)
Travel: \$ 2,000 (No Change)

Reason for Supplement 2

Is to extend the period of performance from September 30, 2011 to September 30, 2012. No change in budget.

Manhours: 4,335.62 (No Change)
Material: \$0 (No Change)
Travel: \$2,000 (No Change)

Reason for Supplement 3

Is to increase budgeted hours by 692.8 hours from 4,335.62 to 5,028.42.

Manhours: 5,028.42 Was 4,335.62
Material: \$0 (No Change)
Travel: \$2,000 (No Change)

Reason for Supplement 4

Is to extend the period of performance from September 30, 2012 to September 30, 2013. No change in budget.

Manhours: 5,028.42 (No Change)
Material: \$0 (No Change)
Travel: \$2,000 (No Change)

*Reason for Supplement 5

- a. To extend the period of performance from September 30, 2013 to January 30, 2014 with no change in budget and;
- b. To add the requirement to deliver a comprehensive report of Government Furnished Equipment (GFE) located at both JSMC-Lima and GDLS-Scranton manufacturing sites.
1. GFE Report: Task Objectives:
 - 1.1 GFE to be addressed under this scope of work is per the following:
 - a. Industrial Plant Equipment (IPE) used (or previously used) directly for production in support of the manufacturing operations.
 - b. Special Test Equipment (example: bore sights)
 - c. Equipment valued at less than \$10,000 at time of purchase or desktop-type or workbench-top type equipment should not be included, except as stated in Section 3.0.b.

1.2 GDLS will utilize the listings of Government Furnished Equipment developed from Appendix B-Lima Equipment and Appendix C-Scranton Equipment, provided under the February 2012 GDLS Industrial Base Study and update this listing based on any IPE/STE that was added or removed from the plant since its publication with the information described in Section 2.0.

2.0 Scope of Work:

2.1 For each piece of equipment addressed under this effort, the information listed below shall be provided, where available. This information should be provided in an Excel table.

- a. Equipment name, Government Asset number, Serial Number, GDLS Tag number
- b. Original manufacturer name, year of manufacture, date equipment was put in service.
- c. Identify if the equipment was recommended to be (1) retained as status quo, (2) repaired (3) refurbished (4) replaced or (5) undergo the disposal process.
- d. Outside dimensions of the equipment (inches/feet)
 - i. Also provide access or clearance requirements (inches/feet) during operation
- e. Is the equipment self-contained, mounted, or in-ground?
 - i. If equipment is in-ground, identify the size of the pit that would need to be filled if the equipment is removed, and estimate a cost for filling the pit.
- f. The building number where the equipment is located, including:
 - i. the location of the equipment in the building, indicating the grid reference on the map provided in 1.4 of this scope of work.
 - ii. the floor space that is utilized for the equipment in question
 - iii. note if the equipment is portable
- g. Performance characteristics
 - i. Operating window size
 - ii. Platen size
 - iii. Processing speed
 - iv. Type of controls or controllers on equipment (example: PLCs, Allen Bradley)
 - v. Does the equipment emit exhaust fumes? If so, how is that handled?
 - vi. Other applicable characteristics (as determined by the contractor)
- h. Number of operators required
- i. Power sources for equipment (example: gas, steam, electric, compressed air) and service size (example: 100A, 60psi)
- j. What solids and liquids are used in the operation of the equipment? (example: lubricants)
- k. Current condition of the equipment (see Definitions)
- l. Identify any current issues with the equipment (example: safety, environmental, outstanding CWO, level of

repair)

- m. Has there been any historical issue obtaining repair parts? If so, identify the issue. Is there any forecasted issue with obtaining repair parts? If so, identify the issue.
- n. Identify programs supported by each piece of equipment
 - i. Identify the types of manufacturing process the equipment performs for each program.
- o. Current Preventative Maintenance schedule as shown in MP2.
- p. Identify unique safety equipment associated (example: required extensive guarding). Do not include standard plant ear protection, standard safety glasses, or standard guarding in the response.
- q. Are there any known environmental concerns that this equipment is grandfathered in under? i.e. We could not move this equipment or the process out of this location due to new environmental regulations.
- r. Photos (color)
 - i. Each side of the equipment (if possible)
 - ii. Close-up photo of the cutting or work space
 - iii. Close-up photos of any issue areas, such as those detailed in 1.3 l, p, or q.

2.2 Provide layouts of buildings housing GFE. The layout should include grid references.

3.0 Ground Rules / Assumptions:

- a. GDLS will use the list of Government Furnished Equipment developed from Appendix B-Lima Equipment and Appendix C-Scranton Equipment, provided under the February 2012 GDLS Industrial Base Study, and include any updates.
- b. At the first monthly meeting, the contractor will provide a list of the GFE that will NOT be included in this effort per section 1.1.c. The Government will review the list and determine whether any of the items on this list should be included in the report required under Section 2.0. If so, the COR will notify the contractor with the items.
- c. The USG intent is for the contractor to obtain this information without shutting down the plant, shutting down equipment, removing any equipment, or otherwise going to extraordinary measures. If any of these steps are required, an answer of not available is acceptable.

4.0 Deliverables:

- a. Monthly reviews with the government will be conducted. The meeting will be a maximum of one hour and held at GDLS Sterling Heights. Contractor will identify progress to date and relay any issues or concerns.
- b. A draft report will be delivered no later than 30 December 2013 in accordance with CDRL A00X. The government will have two weeks to review and submit changes. Then GDLS will have one week to make revisions and submit the final report.
 - i. The report should include the scope of work, a summary of approach, and general timelines of the project.
- c. CDs of the final report - 5 each -- Fully functional, unlocked, unencrypted Microsoft Office Excel 2007 format capable of being edited.

5.0 Definitions

For the purposes of collecting the information required by Section 2.1 above, the following definitions apply:

- a. Self-contained: Equipment is free standing on the ground or other surface, not bolted, no special foundation or pit required.
- b. Mounted: Equipment is bolted to a surface, no special foundation or pit required.
- c. In-ground: Equipment requires special foundation or a pit; can be bolted or free standing.
- d. Condition Codes:
 - i. Excellent: In good working order, rarely out of service or in need of repair, parts and service readily available.
 - ii. Good: Approaching end of rated service life, in good working condition, requiring occasional repair. Parts still available but harder to find.
 - iii. Poor: Out of rated service life, replacement parts are not available and/or not in working condition and out of service frequently.
 - iv. Salvage: Property which has value in excess of its basic material content, but repair or rehabilitation is impractical and/or uneconomical.
 - v. Scrap: Property which has no value except for its basic material content.

6.0 Authorized Hours: Total manhours allocated for Supplement 5 are 1,769 hours.

7.0 Period of performance is extended from September 30, 2013 to January 30, 2014. No change in budget from previous supplements.

Manhours: 5,028.42 (No Change)
Material: \$ 0 (No Change)
Travel: \$2,000 (No Change)

Andrea Ballantine
COR

Lisa M. Jones
CONTRACTING OFFICER

*Work Directive MAP-5, Supplement #5 incorporated via Modification P00015.