

**U.S. ARMY TANK AUTOMOTIVE AND ARMAMENTS COMMAND
WORK DIRECTIVE**

CONTRACTOR:
Orion Advanced Simulation & Intel Systems, Inc.

WORK DIRECTIVE NO.: 00010107

Sheet 1 of 3

Date: 16 June 2000

CONTRACT NO.:

CONTRACT REFERENCE:

PROGRAM/VEHICLE: Abrams Tank System

SUBJECT: M1A2 SEP ABRAMS COMMON SOFTWARE LIBRARY (ACSL) ENGINEERING SUPPORT

1.0 OBJECTIVE

Continue development of the M1A2 SEP ACSL, to include: M1A2 SEP ACSL Versions 3.4 and 3.4.1, and to initiate development of a follow on to Verston 3.4.1. Version numbers correspond to U.S. M1A2 SEP Tank Software releases.

2.0 DESIGN CRITERIA

- A. **CONFIGURATION** – The contractor shall use the U.S. M1A2 SEP Tank Software Versions 3.4 and 3.4.1 for work performed under this work directive.
- B. **SYSTEM ARCHITECTURE** – Emphasis shall be placed on maintaining consistency with previous releases of M1A2 SEP ACSL and with previous releases of the M1A2 SEP ACSL Interface Control Document (ICD).
- C. **STANDARDS** – The contractor shall use the Ada programming language in accordance with ANSI/MIL-STD1815A-1983 for ACSL software developed under this work directive.

3.0 TASKS

- A. The contractor shall develop an engineering release of M1A2 SEP ACSL 3.4 based on the M1A2 SEP Tank Software Version 3.4. SEP ACSL Version 3.4 shall be developed in order to shorten the development time for SEP ACSL Version 3.4.1. Design, development and documentation standards shall be in accordance to those used on previous releases of M1A2 SEP ACSL.
 - 1. The contractor shall develop a M1A2 SEP ACSL Version 3.4.
 - 2. The contractor shall update the M1A2 SEP ACSL ICD.
 - 3. The contractor shall update the M1A2 SEP ACSL Software Design Document.
 - 4. The contractor shall update the tools and test suite.

Approved by the Contracting Officer's Technical Representative: Kevin Howson Date: 22 June 00

Approval: Contracting Officer: Cindy L. Peterson Date: 17 Jul 00

Acknowledgement: Contractor's Representative: Carl Hobson Date: 7/15/2000

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- B. The contractor shall develop a formal release of M1A2 SEP ACSL 3.4.1 based on the M1A2 SEP Tank Software Version 3.4.1. Design, development and documentation standards shall be in accordance to those used on previous releases of M1A2 SEP ACSL.
1. The contractor shall develop a M1A2 SEP ACSL Version 3.4.1.
 2. The contractor shall update the M1A2 SEP ACSL ICD.
 3. The contractor shall update the M1A2 SEP ACSL Software Design Document.
 4. The contractor shall update the tools and test suite.
 5. The contractor shall support the government in conduct of verification audits and acceptance test activities.
 6. The contractor shall support the prime training device contractors in integrating the M1A2 SEP ACSL into the M1A2 SEP TADSS.
- C. The contractor shall initiate development of a release of M1A2 SEP ACSL based on the M1A2 SEP Tank follow-on software to Version 3.4.1. Design, development, and documentation standards shall be in accordance to those used on previous releases of M1A2 SEP ACSL.
1. The contractor shall initiate development of a M1A2 SEP ACSL Version 3.x.
 2. The contractor shall initiate update of the M1A2 SEP ACSL ICD.
 3. The contractor shall initiate update of the M1A2 SEP ACSL Software Design Document.
 4. The contractor shall initiate update of the tools and test suite.

3.0 GOVERNMENT-FURNISHED ITEMS

- A. The government will provide the contractor with a copy of the U.S. M1A2 SEP Tank Software, Versions 3.4 and higher, in a tape format specified by the contractor.
- B. The government will provide the contractor with M1A2 SEP Tank Software Documentation, as it becomes available and as requested by the contractor.
- C. The government will provide access to a M1A2 SEP Tank as requested and required by the contractor in support of this effort.

4.0 DELIVERABLES

- A. M1A2 SEP ACSL Version 3.4.1
- B. Updated version(s) of the M1A2 SEP ACSL ICD.

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- C. Updated version(s) of the M1A2 SEP ACSL Software Design Document.
 - D. Updated version(s) of the M1A2 SEP ACSL tools and test suite, as desired by the government.
 - E. Monthly cost and performance reports.

5.0 ESTIMATED LEVEL OF EFFORT (HOURS)

Develop M1A2 SEP ACSL, Version 3.4	2,080
Develop M1A2 SEP ACSL, Version 3.4.1	1,040
Initiate development of M1A2 SEP ACSL, Version 3.x	320
Total	3,440

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WORK DIRECTIVE NO.: 00010108

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Date: 16 June 2000

CONTRACT NO.:

CONTRACT REFERENCE:

PROGRAM/VEHICLE: Abrams Tank System

SUBJECT: M1A2 ABRAMS COMMON SOFTWARE LIBRARY (ACSL) DIAGNOSTICS KERNEL
ENGINEERING SUPPORT

1.0 OBJECTIVE

Incorporate the M1A2 SEP Tank Diagnostics capabilities into the M1A2 SEP ACSL.

2.0 DESIGN CRITERIA

- A. BASELINE CONFIGURATION - The contractor shall use the latest fielded version of the U.S. M1A2 SEP Tank Software for work performed under this work directive.
- B. SYSTEM ARCHITECTURE - The contractor shall incorporate the M1A2 SEP Tank Software Diagnostics capabilities into the existing M1A2 SEP ACSL.
- C. STANDARDS - The contractor shall use the Ada programming language in accordance with ANSI/MIL-STD1815A-1983 for the software development required under this work directive.

3.0 ANALYSIS

- A. The contractor shall analyze the latest fielded version of the M1A2 SEP Tank Software with its associated documentation and define modifications to the M1A2 SEP ACSL system architecture that will enable the contractor to incorporate the tank software diagnostics capability into the M1A2 SEP ACSL. The objective is to maximize the effective use of the M1A2 SEP ACSL in the M1A2 SEP Tank Maintenance Trainer.

4.0 TASKS

- A. The contractor shall meet with government and contractor maintenance trainer representatives to define the M1A2 SEP Tank diagnostics capabilities that are to be incorporated into the M1A2 SEP ACSL.
- B. The contractor shall define the M1A2 SEP ACSL system modifications that are required to incorporate the capabilities as identified.
- C. The contractor shall complete 50 % of the required M1A2 SEP ACSL modifications.

Approved by the Contracting Officer's Technical Representative: Kevin House Date: 22 June 00

Approval: Contracting Officer: Cindy L. DeGennaro Date: 17 Jul 00

Acknowledgement: Contractor's Representative: Carl Hobson Date: 7/15/2000

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D. The contractor shall complete **50%** of the M1A2 SEP ACSL Interface Control Document modifications, which defines the interface between the M1A2 SEP ACSL and the M1A2 training systems' host computer.

E. The contractor shall complete **50%** of the M1A2 SEP ACSL Software Design Document modifications.

The following tasks (F – H) shall be delayed until Phase II, which shall begin in October 2000.

F. *The contractor shall update the tools and test suite required to conduct contractor testing and to support government verification audits and acceptance test of the M1A2 SEP ACSL.*

G. *The contractor shall support the government in conduct of verification audits and acceptance test activities.*

H. *The contractor shall support the prime training device contractor in integrating the M1A2 SEP ACSL into the M1A2 SEP Tank Maintenance Trainer.*

5.0 GOVERNMENT-FURNISHED ITEMS

A. The government will provide the contractor with a copy of the latest version of the fielded. M1A2 SEP Tank Software, in a tape format specified by the contractor.

B. The government will provide the contractor with M1A2 SEP Tank Software Documentation, as it becomes available and as requested by the contractor.

C. The government will provide access to a M1A2 SEP Tank as requested and required by the contractor in support of this effort.

6.0 DELIVERABLES

All deliverables, except Item E – “Monthly Cost and Performance Reports” shall be delayed until Phase II.

A. The M1A2 SEP ACSL with embedded M1A2 SEP Tank Diagnostics.

B. An updated version of the M1A2 SEP ACSL ICD.

C. An updated version of the M1A2 SEP ACSL Software Design Document.

D. The M1A2 SEP ACSL tools and test suite, as desired by the government.

E. Monthly cost and performance reports.

7.0 Hours

M1A2 SEP ACSL with M1A2 Diagnostics 3,400

Total 3,400