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Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army **Date:** February 2016

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| Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i> | R-1 Program Element (Number/Name) PE 0604280A / <i>Joint Tactical Radio</i> |
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| COST (\$ in Millions) | Prior Years | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total | FY 2018 | FY 2019 | FY 2020 | FY 2021 | Cost To Complete | Total Cost |
|---|-------------|---------|---------|--------------|-------------|---------------|---------|---------|---------|---------|------------------|------------|
| Total Program Element | - | 9.454 | 4.546 | 0.000 | - | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 14.000 |
| DZ5: <i>Handheld, Manpack and Small Form Fit (JTRS HMS)</i> | - | 9.454 | 4.546 | 0.000 | - | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 14.000 |

Note

In coordination with G8 and the Army Budget Office, HMS funding PE 0604280A was realigned under PE 0605042A in PB17. The HMS program will execute funding under two separate project codes for Manpack Radio (Project Code FA1) and Rifleman Radio (Project Code FA2) in FY17 and out.

A. Mission Description and Budget Item Justification

Handheld, Manpack, and Small Form Fit (HMS) is a materiel solution meeting the requirements for a Software Communications Architecture (SCA) compliant hardware system hosting SCA-compliant Government purpose rights software waveforms (applications). HMS is an Acquisition Category (ACAT) ID Program that encompasses specific requirements to support the US Army, US Air Force, US Navy, US Marine Corps and the Special Operations Command (SOCOM) communication needs.

HMS provides voice and data communications to the tactical edge/most disadvantaged Warfighter with an on the move, at the halt, and stationary Line of Sight (LOS)/ Beyond Line of Sight (BLOS) capability for both dismounted personnel and platforms. HMS radios are software re-programmable, networkable multi-mode system (of systems) capable of simultaneous voice, data and video communications. The embedded Small Form Fit (SFF) versions of HMS may be used for Unmanned Vehicles and other platform applications.

HMS is structured as a single program of record. The program has completed the Engineering Manufacturing and Development Phase and received Milestone C approval on 17 June 2011 with Low Rate Initial Production configured radios.

HMS is currently executing a May 2014 approved acquisition strategy to procure modified Non-Developmental Items (NDI) through full and open competition open to all potential industry partners. Two contracts will be awarded in support of this effort. The first contract will procure NDI Secret and Below Rifleman Radios (RR) for use in a classified environment. It was awarded on 29 April 2015. The RR ports the Soldier Radio Waveform (SRW)-Army managed waveform. The second contract will procure Manpack (MP) radios for use in a classified environment. Waveforms to be ported to the MP include: SRW, Single Channel Ground and Airborne Radio System (SINCGARS)-Army managed waveform, Satellite Communications (SATCOM)-Army managed waveform, and Mobile-User Objective System (MUOS)-Navy managed waveform.

The Army will award Firm Fixed-Price (FFP) Indefinite Delivery Indefinite Quantity (IDIQ) Contracts through a multiple step selection process:

- a. Award FFP Contracts and initial delivery orders to all qualified vendors based on technical acceptability and demonstrations (3QFY15 for RR and 3QFY16 for MP).
- b. Award second delivery orders based on qualification test results (4QFY15 for RR and 1QFY17 for MP)
- c. Award FRP delivery orders based on operational assessments and best value trade off construct (2QFY17 for RR and 4QFY18 for MP).

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| Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i> | R-1 Program Element (Number/Name) PE 0604280A / <i>Joint Tactical Radio</i> |
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The FY 2017 budget will provide funding that is necessary to execute the required full and open competition contract strategy for the RR and MP products. Specifically, the funding is needed to conduct testing for the MP candidate products to demonstrate compliance with program requirements; assess effectiveness, suitability, and survivability; to obtain material release for FRP; and to fully fund the full and open competition Operational Evaluation on the MP candidate radios as laid out in the HMS Acquisition Strategy approved May 2014. The funding will also support safety, spectrum supportability, and other certifications necessary to prepare the products for fielding.

| B. Program Change Summary (\$ in Millions) | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total |
|---|----------------|----------------|---------------------|--------------------|----------------------|
| Previous President's Budget | 9.827 | 9.861 | 6.154 | - | 6.154 |
| Current President's Budget | 9.454 | 4.546 | 0.000 | - | 0.000 |
| Total Adjustments | -0.373 | -5.315 | -6.154 | - | -6.154 |
| • Congressional General Reductions | -0.373 | - | | | |
| • Congressional Directed Reductions | - | -5.315 | | | |
| • Congressional Rescissions | - | - | | | |
| • Congressional Adds | - | - | | | |
| • Congressional Directed Transfers | - | - | | | |
| • Reprogrammings | - | - | | | |
| • SBIR/STTR Transfer | - | - | | | |
| • Realignment under new PE | - | - | -6.154 | - | -6.154 |

Change Summary Explanation

FY2015 funding decreased from previous President's Budget to Current BES/President's Budget because of a congressional general reduction. A FY2016 \$5.315M Congressional Mark was assessed against HMS RDTE funding due to a delay in schedule of the Rifleman Radio Operational Test. The funding associated with FY2017 was realigned to PE 0605042A.

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| Exhibit R-2A, RDT&E Project Justification: PB 2017 Army | | | | | | | | | | Date: February 2016 | | |
| Appropriation/Budget Activity 2040 / 5 | | | | | R-1 Program Element (Number/Name) PE 0604280A / <i>Joint Tactical Radio</i> | | | | Project (Number/Name) DZ5 / <i>Handheld, Manpack and Small Form Fit (JTRS HMS)</i> | | | |
| COST (\$ in Millions) | Prior Years | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total | FY 2018 | FY 2019 | FY 2020 | FY 2021 | Cost To Complete | Total Cost |
| DZ5: <i>Handheld, Manpack and Small Form Fit (JTRS HMS)</i> | - | 9.454 | 4.546 | 0.000 | - | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 14.000 |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

Note

In coordination with G8 and the Army Budget Office, HMS funding PE 0604280A was realigned under PE 0605042A in PB17. The HMS program will execute funding under separate project codes for Manpack Radio (Project Code FA1) and Rifleman Radio (Project Code FA2) in FY17 and out.

A. Mission Description and Budget Item Justification

Handheld, Manpack, and Small Form Fit (HMS) is a materiel solution meeting the requirements for a Software Communications Architecture (SCA) compliant hardware system hosting SCA-compliant Government purpose rights software waveforms (applications). HMS is an Acquisition Category (ACAT) ID Program that encompasses specific requirements to support the US Army, US Air Force, US Navy, US Marine Corps and the Special Operations Command (SOCOM) communication needs.

HMS provides voice and data communications to the tactical edge/most disadvantaged Warfighter with an on the move, at the halt, and stationary Line of Sight (LOS)/ Beyond Line of Sight (BLOS) capability for both dismounted personnel and platforms. HMS radios are software re-programmable, networkable multi-mode system (of systems) capable of simultaneous voice, data and video communications. The embedded Small Form Fit (SFF) versions of HMS may be used for Unmanned Vehicles and other platform applications.

HMS is structured as a single program of record. The program has completed the Engineering Manufacturing and Development Phase and received Milestone C approval on 17 June 2011 with Low Rate Initial Production configured radios.

HMS is currently executing a May 2014 approved acquisition strategy to procure modified Non-Developmental Items (NDI) through full and open competition open to all potential industry partners. Two contracts will be awarded in support of this effort. The first contract will procure NDI Secret and Below Rifleman Radios (RR) for use in a classified environment. It was awarded on 29 April 2015. The RR ports the Soldier Radio Waveform (SRW)-Army managed waveform. The second contract will procure Manpack (MP) radios for use in a classified environment. Waveforms to be ported to the MP include: SRW, Single Channel Ground and Airborne Radio System (SINCGARS)-Army managed waveform, Satellite Communications (SATCOM)-Army managed waveform, and Mobile-User Objective System (MUOS)-Navy managed waveform.

The Army will award Firm Fixed-Price (FFP) Indefinite Delivery Indefinite Quantity (IDIQ) Contracts through a multiple step selection process:

- a. Award FFP Contracts and initial delivery orders to all qualified vendors based on technical acceptability and demonstrations (3QFY15 for RR and 3QFY16 for MP).
- b. Award second delivery orders based on qualification test results (4QFY15 for RR and 1QFY17 for MP)
- c. Award FRP delivery orders based on operational assessments and best value trade off construct (2QFY17 for RR and 4QFY18 for MP).

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| Exhibit R-2A, RDT&E Project Justification: PB 2017 Army | | Date: February 2016 |
| Appropriation/Budget Activity 2040 / 5 | R-1 Program Element (Number/Name) PE 0604280A / <i>Joint Tactical Radio</i> | Project (Number/Name) DZ5 / <i>Handheld, Manpack and Small Form Fit (JTRS HMS)</i> |

| B. Accomplishments/Planned Programs (\$ in Millions) | FY 2015 | FY 2016 | FY 2017 |
|--|----------------|----------------|----------------|
| <p>Title: HMS</p> <p>Description: Handheld, Manpack, and Small Form Fit (HMS) is a materiel solution meeting the requirements for a Software Communications Architecture (SCA) compliant hardware system hosting SCA-compliant Government purpose rights software waveforms (applications). HMS is an Acquisition Category (ACAT) ID Program that encompasses specific requirements to support the US Army, US Air Force, US Navy, US Marine Corps and the Special Operations Command (SOCOM) communication needs.</p> <p>HMS provides voice and data communications to the tactical edge/most disadvantaged Warfighter with an on the move, at the halt, and stationary Line of Sight (LOS)/ Beyond Line of Sight (BLOS) capability for both dismounted personnel and platforms. HMS radios are software re-programmable, networkable multi-mode system (of systems) capable of simultaneous voice, data and video communications. The embedded Small Form Fit (SFF) versions of HMS may be used for Unmanned Vehicles and other platform applications.</p> <p>HMS is structured as a single program of record. The program has completed the Engineering Manufacturing and Development Phase and received Milestone C approval on 17 June 2011 with Low Rate Initial Production configured radios.</p> <p>HMS is currently executing a May 2014 approved acquisition strategy to procure modified Non-Developmental Items (NDI) through full and open competition open to all potential industry partners. Two contracts will be awarded in support of this effort. The first contract will procure NDI Secret and Below Rifleman Radios (RR) for use in a classified environment. It was awarded on 29 April 2015. The RR ports the Soldier Radio Waveform (SRW)-Army managed waveform. The second contract will procure Manpack (MP) radios for use in a classified environment. Waveforms to be ported to the MP include: SRW, Single Channel Ground and Airborne Radio System (SINCGARS)-Army managed waveform, Satellite Communications (SATCOM)-Army managed waveform, and Mobile-User Objective System (MUOS)-Navy managed waveform.</p> <p>The Army will award Firm Fixed-Price (FFP) Indefinite Delivery Indefinite Quantity (IDIQ) Contracts through a multiple step selection process:</p> <ol style="list-style-type: none"> Award FFP Contracts and initial delivery orders to all qualified vendors based on technical acceptability and demonstrations (3QFY15 for RR and 3QFY16 for MP). Award second delivery orders based on qualification test results (4QFY15 for RR and 1QFY17 for MP) Award FRP delivery orders based on operational assessments and best value trade off construct (2QFY17 for RR and 4QFY18 for MP). <p>FY 2015 Accomplishments:</p> | 9.454 | 4.546 | - |

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| Appropriation/Budget Activity 2040 / 5 | R-1 Program Element (Number/Name) PE 0604280A / <i>Joint Tactical Radio</i> | Project (Number/Name) DZ5 / <i>Handheld, Manpack and Small Form Fit (JTRS HMS)</i> |

| B. Accomplishments/Planned Programs (\$ in Millions) | FY 2015 | FY 2016 | FY 2017 |
|---|----------------|----------------|----------------|
| The FY 2015 budget provided funding to continue executing the full and open competition testing strategy for the Rifleman and Manpack products. The remaining funding is being used primarily to support the Rifleman Radio Operational Test. | | | |
| FY 2016 Plans: The FY 2016 budget will provide funding to continue executing the full and open competition testing strategy for the Rifleman and Manpack products. Specifically, the funding is needed to conduct the Rifleman Radio Operational Test and the Manpack Radio Qualification Test. | | | |
| Accomplishments/Planned Programs Subtotals | 9.454 | 4.546 | - |

| C. Other Program Funding Summary (\$ in Millions) | | | | | | | | | | | |
|--|----------------|----------------|-------------------------|------------------------|--------------------------|----------------|----------------|----------------|----------------|-----------------------------|-------------------|
| Line Item | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total | FY 2018 | FY 2019 | FY 2020 | FY 2021 | Cost To Complete | Total Cost |
| • RDTE: 0605042A, FA1: <i>Manpack Radio</i> | - | - | 14.819 | - | 14.819 | 0.108 | 1.570 | 2.129 | 3.825 | Continuing | Continuing |
| • RDTE: 0605042A, FA2: <i>Rifleman Radio</i> | - | - | 4.005 | - | 4.005 | 5.309 | 5.437 | 7.466 | 17.716 | Continuing | Continuing |
| • OPA: B90000, B90210: <i>JTRS Cluster 5 (Handheld)</i> | 14.200 | 34.910 | - | - | - | - | - | - | - | 0.000 | 49.110 |
| • OPA: B90000, B90215: <i>JTRS (Manpack)</i> | 26.511 | 29.730 | - | - | - | - | - | - | - | 0.000 | 56.241 |
| • OPA: B95004, B95006: <i>Handheld Radio</i> | - | - | 43.903 | - | 43.903 | 52.782 | 53.490 | 54.959 | 50.294 | Continuing | Continuing |
| • OPA: B95004, B95007: <i>Manpack Radio</i> | - | - | 230.803 | - | 230.803 | 353.716 | 360.177 | 360.289 | 388.711 | Continuing | Continuing |

Remarks
HMS RDTE FY16 and prior year funding is held under PE 0604280A Joint Tactical Radios. Due to a request to provide more transparency into the program, HMS RDTE funding will move to PE: 0605042A Tactical Network Radio Systems (Low-Tier): FA1 Manpack Radio and FA2 Rifleman Radio. HMS procurement funding can be found under Standard Study Number (SSN) B90210 JTRS Cluster 5 (Handheld) and SSN B90215 JTRS (Manpack) for FY16 & prior. Procurement funding for FY17 and beyond will be found in SSN B95004: SSN B95006 Handheld and SSN B95007 Manpack.

D. Acquisition Strategy
HMS is currently executing a May 2014 approved acquisition strategy to procure modified Non-Developmental Items (NDI) through full and open competition open to all potential industry partners. Two contracts will be awarded in support of this effort. The first contract will procure NDI Secret and Below Rifleman Radios for use in a classified environment. It was awarded on 29 April 2015. The Rifleman Radio ports the Soldier Radio Waveform (SRW)-Army managed waveform. The second

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contract will procure NDI Manpack radios for use in a classified environment. Waveforms to be ported to HMS Manpack include: SRW, Single Channel Ground and Airborne Radio System (SINCGARS)-Army managed waveform, Satellite Communications (SATCOM)-Army managed waveform, and Mobile-User Objective System (MUOS)-Navy managed waveform.

E. Performance Metrics

N/A

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| Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army | | | | | | | | | | | | Date: February 2016 | | | |
|--|------------------------|---|-------------|------------------------------------|------------|---------|------------|---|------------|-------------|------------|---------------------|------------------|------------|--------------------------|
| Appropriation/Budget Activity | | | | R-1 Program Element (Number/Name) | | | | Project (Number/Name) | | | | | | | |
| 2040 / 5 | | | | PE 0604280A / Joint Tactical Radio | | | | DZ5 / Handheld, Manpack and Small Form Fit (JTRS HMS) | | | | | | | |
| Management Services (\$ in Millions) | | | | FY 2015 | | FY 2016 | | FY 2017 Base | | FY 2017 OCO | | FY 2017 Total | | | |
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract |
| Project Management Office Support | Various | PEO C3T & CECOM: : APG, MD | 0.280 | 0.532 | | 0.156 | | - | | - | | - | 0 | 0.968 | 0.820 |
| Subtotal | | | 0.280 | 0.532 | | 0.156 | | - | | - | | - | 0.000 | 0.968 | 0.820 |
| Product Development (\$ in Millions) | | | | FY 2015 | | FY 2016 | | FY 2017 Base | | FY 2017 OCO | | FY 2017 Total | | | |
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract |
| HMS JTRS System, Design & Development | C/CPAF | General Dynamics D4 Systems: : Scottsdale, AZ | 21.720 | - | | - | | - | | - | | - | 0 | 21.720 | 21.720 |
| Subtotal | | | 21.720 | - | | - | | - | | - | | - | 0.000 | 21.720 | 21.720 |
| Support (\$ in Millions) | | | | FY 2015 | | FY 2016 | | FY 2017 Base | | FY 2017 OCO | | FY 2017 Total | | | |
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract |
| HMS JTRS Engineering/ Technical Support | Various | PEO C3T, ARL, ESP, CECOM, CERDEC, LCMC, Various: : APG, MD; Various | 0.300 | 0.446 | | - | | - | | - | | - | 0 | 0.746 | 1.605 |
| Subtotal | | | 0.300 | 0.446 | | - | | - | | - | | - | 0.000 | 0.746 | 1.605 |
| Test and Evaluation (\$ in Millions) | | | | FY 2015 | | FY 2016 | | FY 2017 Base | | FY 2017 OCO | | FY 2017 Total | | | |
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract |
| Follow on Delta Development & Testing | Various | EPG, AEC, MBL, ARLSLAD, CERDEC, OTC, JITC, Various: : Ft | 1.952 | 8.476 | | 4.390 | | - | | - | | - | 0 | 14.818 | 19.795 |

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army **Date:** February 2016

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| Appropriation/Budget Activity 2040 / 5 | R-1 Program Element (Number/Name) PE 0604280A / Joint Tactical Radio | Project (Number/Name) DZ5 / Handheld, Manpack and Small Form Fit (JTRS HMS) |
|--|--|---|

| Event Name | FY 2015 | | | | FY 2016 | | | | FY 2017 | | | | FY 2018 | | | | FY 2019 | | | | FY 2020 | | | | FY 2021 | | | |
|--------------------------------------|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|
| | 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 |
| RR Customer Test (CT) | | | | | RRCT | | | | | | | | | | | | | | | | | | | | | | | |
| Manpack (MP) Qualification Test (QT) | | | | | MPQT | | | | | | | | | | | | | | | | | | | | | | | |
| RR Operational Test (OT) - FRP | | | | | RROT | | | | | | | | | | | | | | | | | | | | | | | |

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| Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army | | Date: February 2016 |
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Schedule Details

| Events | Start | | End | |
|--------------------------------------|---------|------|---------|------|
| | Quarter | Year | Quarter | Year |
| RR Customer Test (CT) | 4 | 2015 | 3 | 2016 |
| Manpack (MP) Qualification Test (QT) | 4 | 2016 | 1 | 2017 |
| RR Operational Test (OT) - FRP | 4 | 2016 | 1 | 2017 |