| Exhibit R-2, RDT&E Budget Iten   | n Justificat   | i <b>on:</b> PB 202 | 20 Army     |                 |                |                  |                           |         |                     | Date: Marc    | ch 2019 |         |
|--|----------------|---------------------|-------------|-----------------|----------------|------------------|---------------------------|---------|---------------------|---------------|---------|---------|
| Appropriation/Budget Activity<br>2040: Research, Development, Te<br>Development & Demonstration (S |                | ation, Army         | IBA 5: Syst |                 | -              |                  | t (Number/<br>and, Contro | ,       | ications Sys        | stems - Eng   | n Dev   |         |
| COST (\$ in Millions)  | Prior<br>Years | FY 2018             | FY 2019     | FY 2020<br>Base | FY 2020<br>OCO | FY 2020<br>Total | FY 2021                   | FY 2024 | Cost To<br>Complete | Total<br>Cost |         |         |
| Total Program Element  | -              | 9.559               | 15.950      | 12.595          | -              | 12.595           | 8.622                     | 22.390  | 22.722              | 19.648        | 0.000   | 111.486 |
| 593: Joint Battle Command -<br>Platform (JBC-P)  | -              | 9.559               | 15.950      | 12.595          | -              | 12.595           | 8.622                     | 22.390  | 22.722              | 19.648        | 0.000   | 111.486 |

#### A. Mission Description and Budget Item Justification

Joint Battle Command - Platform (JBC-P) supports the Army Network Modernization Strategy Line of Effort 1, Unified Network which includes:

The development of a standards-based network architecture that unifies enterprise and deployed network capabilities and features a unified transport layer, network operations and other enabling functions that allows integration of disparate networks. The network provides resiliency through path diversity and dynamic routing to ensure tactical units can communicate in hostile environments. It fully incorporates cyber and electronic warfare capabilities that support the employment of the network as a weapon system.

JBC-P also supports the Army Network Modernization Strategy Line of Effort 2, Common Operating Environment by utilizing:

- Interoperable data, message, and waveforms
- Integration with Joint C4ISR and strike capabilities

- Sensors and applications that enable operations across domains

The Joint Battle Command - Platform program is the cornerstone of Joint Forces Command and Control (C2) Situational Awareness (SA) and communications. JBC-P includes a network which enables the movement of data and provides secure Blue Force Tracking (BFT) capability in Platforms and Command Posts, providing soldiers and commanders a map-based Common Operating Picture of the battlefield, as a result, reducing fratricide.

PdM JBC-P, under PM Mission Command (MC), is collaborating with the Communications-Electronics Research, Development and Engineering Center's (CERDEC) Space and Terrestrial Communications Directorate (S&TCD) on evolving the BFT network. Systems engineering studies/planning activities are underway to develop the evolution path of the BFT network, and the introduction of a Modular Open Systems Architecture (MOSA). In addition, there are two RDT&E contractual efforts underway for FY 2018 (assess the feasibility of reusing existing BFT-2 transceivers (hardware) and replacing it third party or government owned waveforms), and FY 2019 (assess the feasibility of introducing BFT network resiliency components to existing BFT network). The goal is for all the R&D & experimentation efforts mentioned above, to inform a BFT-3 full and open solicitation (RFP) to industry FY 2020.

JBC-P RDT&E resources are used to improve JBC-P hardware, network performance and add network resiliency while Mounted Computer Environment RDT&E is used to improve and add software applications.

To better understand how potential changes to the BFT network would affect overall operations, funding was increased in both FY 2017 and FY 2018 to assist PdM JBC-P to fully model the operational BFT network; S&TCD is working on developing a model of the current BFT-2 waveform to test in the BFT portion of their Network Test

| Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Army          | Date: March 2019   |
|---|--|
| Appropriation/Budget Activity                                       | R-1 Program Element (Number/Name)                                |
| 2040: Research, Development, Test & Evaluation, Army I BA 5: System | PE 0604805A / Command, Control, Communications Systems - Eng Dev |
| Development & Demonstration (SDD)                                   |  |

Lab. This Test Lab provides the Government the ability to test proposed fixes, conduct regression testing of future Software and Firmware releases, and replicate any problems the system may experience without impacting the operational network.

FORSCOM users have identified a need for an expeditionary JBC-P capability to better connect the Lower Tactical Internet (LTI) to the BFT network when dismounted; there is an RDT&E contractual effort underway for FY 2019 to develop a reduced Size Weight and Power (SWaP) dismounted BFT transceiver. PdM JBC-P has partnered with CERDEC's Command, Power and Integration Directorate to develope this capability, along with new power solutions.

| B. Program Change Summary (\$ in Millions)            | <u>FY 2018</u> | <u>FY 2019</u> | FY 2020 Base | FY 2020 OCO | FY 2020 Total |
|---|----------------|----------------|--------------|-------------|---------------|
| Previous President's Budget                           | 9.910          | 15.970         | 12.595       | -           | 12.595        |
| Current President's Budget                            | 9.559          | 15.950         | 12.595       | -           | 12.595        |
| Total Adjustments                                     | -0.351         | -0.020         | 0.000        | -           | 0.000         |
| <ul> <li>Congressional General Reductions</li> </ul>  | -0.007         | -0.020         |              |             |               |
| <ul> <li>Congressional Directed Reductions</li> </ul> | -              | -              |              |             |               |
| <ul> <li>Congressional Rescissions</li> </ul>         | -              | -              |              |             |               |
| <ul> <li>Congressional Adds</li> </ul>                | -              | -              |              |             |               |
| <ul> <li>Congressional Directed Transfers</li> </ul>  | -              | -              |              |             |               |
| <ul> <li>Reprogrammings</li> </ul>                    | -              | -              |              |             |               |
| SBIR/STTR Transfer                                    | -0.344         | -              |              |             |               |

| Exhibit R-2A, RDT&E Project Ju  | stification    | : PB 2020 A |         |                 |                | Date: Marc       | ch 2019 |         |         |         |  |               |  |  |  |  |  |
|---|----------------|-------------|---------|-----------------|----------------|------------------|---------|---------|---------|---------|--|---------------|--|--|--|--|--|
| 2040 / 5 PE 0604805A / Command, Control, 593 / Communications Systems - Eng Dev (JBC- |                |             |         |                 |                |                  |         |         |         |         | (Number/Name)<br>int Battle Command - Platform |               |  |  |  |  |  |
| COST (\$ in Millions)   | Prior<br>Years | FY 2018     | FY 2019 | FY 2020<br>Base | FY 2020<br>OCO | FY 2020<br>Total | FY 2021 | FY 2022 | FY 2023 | FY 2024 | Cost To<br>Complete                            | Total<br>Cost |  |  |  |  |  |
| 593: Joint Battle Command -<br>Platform (JBC-P)                                       | -              | 9.559       | 15.950  | 12.595          | -              | 12.595           | 8.622   | 22.390  | 22.722  | 19.648  | 0.000  | 111.486       |  |  |  |  |  |
| Quantity of RDT&E Articles  | -              | -           | -       | -               | -              | -                | -       | -       | -       | -       |  |               |  |  |  |  |  |

#### A. Mission Description and Budget Item Justification

Joint Battle Command - Platform (JBC-P) supports the Army Network Modernization Strategy Line of Effort 1, Unified Network which includes:

The development of a standards-based network architecture that unifies enterprise and deployed network capabilities and features a unified transport layer, network operations and other enabling functions that allows integration of disparate networks. The network provides resiliency through path diversity and dynamic routing to ensure tactical units can communicate in hostile environments. It fully incorporates cyber and electronic warfare capabilities that support the employment of the network as a weapon system.

JBC-P also supports the Army Network Modernization Strategy Line of Effort 2, Common Operating Environment by utilizing:

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The Joint Battle Command - Platform program is the cornerstone of Joint Forces Command and Control (C2) Situational Awareness (SA) and communications. JBC-P includes a network which enables the movement of data and provides secure Blue Force Tracking (BFT) capability in Platforms and Command Posts, providing soldiers and commanders a map-based Common Operating Picture of the battlefield, as a result, reducing fratricide.

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JBC-P RDT&E resources are used to improve JBC-P hardware, network performance and add network resiliency while Mounted Computer Environment RDT&E is used to improve and add software applications.

To better understand how potential changes to the BFT network would affect overall operations, funding was increased in both FY 2017 and FY 2018 to assist PdM JBC-P to fully model the operational BFT network; S&TCD is working on developing a model of the current BFT-2 waveform to test in the BFT portion of their Network Test

| Exhibit R-2A, RDT&E Project Justification: PB 2020 Army  | 1  |              |  | Date: Marc      |                |                  |  |  |  |  |  |
|--|--|--------------|--|-----------------|----------------|------------------|--|--|--|--|--|
| Appropriation/Budget Activity<br>2040 / 5  | <b>R-1 Program Element (Number</b><br>PE 0604805A <i>I Command, Contr</i><br><i>Communications Systems - Eng</i> | ol,          | <b>Project (Number/Name)</b><br>593 I Joint Battle Command - Platform<br>(JBC-P) |                 |                |                  |  |  |  |  |  |
| Lab. This Test Lab provides the Government the ability to test proposed fixes problems the system may experience without impacting the operational network   |  | e Software a | and Firmwa   | re releases,    | and replica    | ate any          |  |  |  |  |  |
| FORSCOM users have identified a need for an expeditionary JBC-P capabilit there is an RDT&E contractual effort underway for FY 2019 to develop a redupartnered with CERDEC's Command, Power and Integration Directorate to develop a reduction develop and the second develop and the second develop are second develop at the second develop are second develop at the second develop | iced Size Weight and Power (SWaF   | ) dismounte  | ed BFT trans   |                 |                |                  |  |  |  |  |  |
| B. Accomplishments/Planned Programs (\$ in Millions)   |  | FY 2018      | FY 2019  | FY 2020<br>Base | FY 2020<br>OCO | FY 2020<br>Total |  |  |  |  |  |
| Title: Software Development  | 0.145  | -            | -  | -               | -              |                  |  |  |  |  |  |
| <b>Description:</b> Develop capabilities, product applications, platform interoperabilities the JBC-P family of systems, to include the development of capabilities to mee (KPPs), and other system attributes. Develop Multi-Level Security Domains for   |  |              |  |                 |                |                  |  |  |  |  |  |
| Title: Software/Systems Engineering  |  | 5.582        | 13.927   | 11.095          | -              | 11.09            |  |  |  |  |  |
| <b>Description:</b> Perform Software/Systems Engineering in support of the develo<br>applications, and services, to include, but not limited to, conducting engineerin<br>development (both software and network), system analyses, technical reading<br>interchange meetings/events, and development of related reports and other d   | ng studies, architecture<br>ess assessments, technical   |              |  |                 |                |                  |  |  |  |  |  |
| <b>FY 2019 Plans:</b><br>Continued system engineering efforts for JBC-P balance of CDD threshold red<br>the Mission Command product line. Conduct Systems Engineering, open syst<br>Component Characterization & Validation for next generation BFT; to include<br>of the BFT 2.0 Transceiver, Satellite Network Control Center (SNCC), Satellite<br>Waveform/Network Virtualization for the BFT 2 network.  | ems architecture design, and the integration & interoperability  |              |  |                 |                |                  |  |  |  |  |  |
| FY 2020 Base Plans:<br>Development solicitation package for BFT 3 satellite ground station full and op   | pen competition.   |              |  |                 |                |                  |  |  |  |  |  |
| Continue to conduct Systems Engineering, open systems architecture design, & Validation for next generation BFT; to include the integration & interoperabil Satellite Network Control Center (SNCC), Satellite Ground Station (SGS), and for the BFT 2 network.  |  |              |  |                 |                |                  |  |  |  |  |  |

| Exhibit R-2A, RDT&E Project Justification: PB 2020 Army   |  |         |         | Date: Marc                                   | h 2019         |                  |  |  |  |
|---|--|---------|---------|--|----------------|------------------|--|--|--|
| 2040 / 5 F  | <b>R-1 Program Element (Number/</b><br>PE 0604805A / Command, Contro<br>Communications Systems - Eng L | ol,     |         | Number/Name)<br>nt Battle Command - Platform |                |                  |  |  |  |
| B. Accomplishments/Planned Programs (\$ in Millions)  |  | FY 2018 | FY 2019 | FY 2020<br>Base                              | FY 2020<br>OCO | FY 2020<br>Total |  |  |  |
| This effort?s funding will be executed by Program Executive Office for Command<br>Tactical.   |  |         |         |  |                |                  |  |  |  |
| <b>FY 2019 to FY 2020 Increase/Decrease Statement:</b><br>BFT 3 HUB Systems Engineering development, studies, and open systems arch nearing completion, in preparation for BFT 3 HUB full and open competition.   | itecture design efforts are  |         |         |  |                |                  |  |  |  |
| Title: Test, Evaluation and Integration   |  | 2.508   | 0.413   | 0.500  | -              | 0.500            |  |  |  |
| <b>Description:</b> Plan and conduct system Integration test & experimentation events of systems, to include Risk Reduction Events, vulnerability testing, and Army Intertesting.   |  |         |         |  |                |                  |  |  |  |
| <b>FY 2019 Plans:</b><br>Will continue to conduct testing on enhancements to the BFT/JBC-P network, to (transceiver) characterization, and validation of the next generation BFT. Continu operational risk reduction of the currently fielded BFT 1 & BFT 2 network, to Inclu Center (SNCC), Satellite Ground Station (SGS), and Waveform Virtualization. | ue to develop a lab based  |         |         |  |                |                  |  |  |  |
| <b>FY 2020 Base Plans:</b><br>Will continue to conduct testing enhancements to the BFT/JBC-P network, to inc (transceiver) characterization, validation of the BFT 3 satellite ground station con FY18 Rapid Innovation Funding (RIF) Resilient BFT deliverable.  |  |         |         |  |                |                  |  |  |  |
| Continue to develop a lab based operational risk reduction of the currently fielded<br>to Include the Satellite Network Control Center (SNCC), Satellite Ground Station<br>Virtualization. This effort?s funding will be executed by Program Executive Office<br>Communications-Tactical.   | (SGS), and Waveform  |         |         |  |                |                  |  |  |  |
| FY 2019 to FY 2020 Increase/Decrease Statement:<br>Slight increase in validations and related costs.  |  |         |         |  |                |                  |  |  |  |
| Title: PM Support (Matrix & Contractor)   |  | 1.324   | 1.026   | 1.000  | -              | 1.000            |  |  |  |
| Description: JBC-P matrix and contractor support, including technical, logistics,   | and business staff oversight.  |         |         |  |                |                  |  |  |  |
| FY 2019 Plans:  |  |         |         |  |                |                  |  |  |  |

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| Exhibit R-2A, RDT&E Project Justification: PB 2020 Army |   |   | Date: March 2019                         |
|---|---|---|--|
| Appropriation/Budget Activity<br>2040 / 5               | <b>R-1 Program Element (Number/Name)</b><br>PE 0604805A / Command, Control,<br>Communications Systems - Eng Dev | ( | umber/Name)<br>Battle Command - Platform |

| B. Accomplishments/Planned Prog   | <u>rams (\$ in N</u>      | <u>/lillions)</u>           |                                |                               |                          |                               | FY 2018                   | FY 2019                   | FY 2020<br>Base           | FY 2020<br>OCO           | FY 2020<br>Total              |
|---|---------------------------|-----------------------------|--------------------------------|-------------------------------|--------------------------|-------------------------------|---------------------------|---------------------------|---------------------------|--------------------------|-------------------------------|
| Will continue to provide technical, log<br>system engineering activities. Progra<br>logistical support for the BFT-3 (Prev<br>planning team (IPT) & consortium (in                        | m Managem<br>iously BFT N | ent includes<br>letwork Evo | s funds exect                  | ution, contra                 | ct managem               | ient, and                     |                           |                           |                           |                          |                               |
| FY 2020 Base Plans:<br>Will continue to provide technical, log<br>system engineering activities. Progra<br>logistical support for the BFT-3 integr<br>funding will be executed by Program | m Managem<br>ated plannin | ent includes<br>g team (IPT | s funds exect<br>) & consortiu | ution, contra<br>ım (industry | ct managem<br>& academia | ient, and<br>). This effort?s | 5                         |                           |                           |                          |                               |
| FY 2019 to FY 2020 Increase/Decre<br>Reducing CERDEC gov't engineering<br>engineering development efforts; rem<br>efforts.  | g team, due t             | o completio                 |                                |                               |                          |                               |                           |                           |                           |                          |                               |
| Title: FY 2019 SBIR/STTR Transfer   |                           |                             |                                |                               |                          |                               | -                         | 0.584                     | -                         | -                        | -                             |
| <b>FY 2019 Plans:</b><br>FY 2019 SBIR/STTR Transfer   |                           |                             |                                |                               |                          |                               |                           |                           |                           |                          |                               |
| FY 2019 to FY 2020 Increase/Decree<br>FY 2019 SBIR/STTR Transfer  | ase Statem                | ent:                        |                                |                               |                          |                               |                           |                           |                           |                          |                               |
|   |                           |                             | Accomplis                      | hments/Pla                    | nned Progra              | ams Subtotal                  | <b>s</b> 9.559            | 15.950                    | 12.595                    | -                        | 12.59                         |
| C. Other Program Funding Summa  | ry (\$ in Milli           | ons)                        |                                |                               |                          |                               |                           |                           |                           |                          |                               |
| • •   | •                         |                             | <u>FY 2020</u>                 | <u>FY 2020</u>                | <u>FY 2020</u>           |                               |                           |                           |                           | Cost To                  |                               |
| Line Item<br>• W61990: JOINT BATTLE<br>COMMAND - PLATFORM (JBC-P)   | <u>FY 2018</u><br>342.649 | <u>FY 2019</u><br>401.991   | <u>Base</u><br>265.667         | <u>0C0</u><br>25.568          | <u>Total</u><br>291.235  | <u>FY 2021</u><br>246.166     | <u>FY 2022</u><br>183.106 | <u>FY 2023</u><br>160.856 | <u>FY 2024</u><br>154.461 | <u>Complete</u><br>0.000 | <u>Total Cos</u><br>1,780.464 |
| Remarks   |                           |                             |                                |                               |                          |                               |                           |                           |                           |                          |                               |
| Procurement funding in FY 2016 thro<br>including JBC-P and JBC-P Log.   | ough 2023 (E              | Base funding                | ı) is designat                 | ed for the pr                 | ocurement,               | fielding, and p               | rogram man                | agement of                | JBC-P Fam                 | nily of Syste            | ems                           |

| Exhibit R-2A, RDT&E Project Justification: PB 2020 Army |                                  | Date: March 2019                      |
|---|----------------------------------|---------------------------------------|
| Appropriation/Budget Activity                           |                                  | Project (Number/Name)                 |
| 2040 / 5  | PE 0604805A / Command, Control,  | 593 I Joint Battle Command - Platform |
|   | Communications Systems - Eng Dev | (JBC-P)                               |

#### D. Acquisition Strategy

The JBC-P Capabilities Development Document in lieu of Capabilities Production Document (CDD ILO CPD) was Joint Requirements Oversight Council (JROC) approved March 2013. Completed Initial Operational Test & Evaluation (IOT&E) as part of Network Integration Evaluation (NIE) 13.2 in 3rd Quarter FY 2013. The IOT&E tested the JBC-P system software on existing FBCB2 hardware (non-dismountable vehicle systems) and future production-representative hardware. On completion of Army Interoperability Certification (AIC) and Joint Interoperability Test Certification (JITC), MDA authorized Full Rate Production (FRP) in 1st Quarter FY 2014. First unit equipped (FUE) was successfully conducted 3rd Quarter FY 2015.

Developmental efforts are being performed through intra-government collaboration. System engineering efforts are being performed by CERDEC's Space and Terrestrial Communications Directorate (S&TCD); Command, Power and Integration (CP&I) & the Intelligence and Information Warfare Directorate (I2WD). The goal is for all R&D & experimentation efforts to inform a BFT-3 full and open solicitation (RFP) to industry FY 2020. Hardware along with fielding, training and field support efforts are obtained through existing competitively awarded contracts.

#### E. Performance Metrics

N/A

| Appropriation/Budge<br>2040 / 5              | t Activity                       | 1   |                | ,     |               | PE 0604 | 4805A / C     | ement (N<br>Command<br>Systems |                    | t <b>(Numbe</b> i<br>bint Battle<br>) |                  | d - Platfo       | rm                  |               |                                |
|--|----------------------------------|---|----------------|-------|---------------|---------|---------------|--------------------------------|--------------------|---------------------------------------|------------------|------------------|---------------------|---------------|--------------------------------|
| Product Developmen                           | nt (\$ in M                      | illions)  |                | FY 2  | 2018          | FY 2    | 019           | FY 2<br>Ba                     |                    |                                       | 2020<br>CO       | FY 2020<br>Total |                     |               |                                |
| Cost Category Item                           | Contract<br>Method<br>& Type     | Performing<br>Activity & Location                   | Prior<br>Years | Cost  | Award<br>Date | Cost    | Award<br>Date | Cost                           | Award<br>Date      | Cost                                  | Award<br>Date    | Cost             | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| JBC-P Software<br>Development                | Various                          | Multiple : Multiple                                 | 67.318         | 0.145 |               | -       |               | -                              |                    | -                                     |                  | -                | Continuing          | Continuing    | -                              |
| JBC-P Software/System<br>Engineering         | Various                          | Multiple<br>(Government and<br>industry) : Multiple | 39.815         | 5.582 |               | 13.927  |               | 11.095                         |                    | -                                     |                  | 11.095           | Continuing          | Continuing    | -                              |
| FY 2019 SBIR/STTR<br>Transfer                | TBD                              | TBD : TBD   | -              | -     |               | 0.584   |               | -                              |                    | -                                     |                  | -                | 0.000               | 0.584         | -                              |
|  | 1                                | Subtotal  | 107.133        | 5.727 |               | 14.511  |               | 11.095                         |                    | -                                     |                  | 11.095           | Continuing          | Continuing    | N//                            |
| Support (\$ in Millions)                     |                                  |   | FY 2018        |       | FY 2          | 019     | FY 2<br>Ba    |                                |                    | 2020<br>CO                            | FY 2020<br>Total |                  |                     |               |                                |
| Cost Category Item                           | Contract<br>Method<br>& Type     | Performing<br>Activity & Location                   | Prior<br>Years | Cost  | Award<br>Date | Cost    | Award<br>Date | Cost                           | Award<br>Cost Date |                                       | Award<br>Date    | Cost             | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| PM Support (Matrix / SETA<br>Contractor)     | Sub Allot                        | PM JBC-P :<br>Aberdeen Proving<br>Ground (APG), MD  | 6.930          | 1.324 |               | 1.026   |               | 1.000                          |                    | -                                     |                  | 1.000            | Continuing          | Continuing    | -                              |
|  | I                                | Subtotal  | 6.930          | 1.324 |               | 1.026   |               | 1.000                          |                    | -                                     |                  | 1.000            | Continuing          | Continuing    | N//                            |
| Test and Evaluation (                        | (\$ in Milli                     | ons)  | Γ              | FY 2  | 2018          | FY 2    | 019           | FY 2<br>Ba                     |                    |                                       | 2020<br>CO       | FY 2020<br>Total |                     |               |                                |
| Cost Category Item                           | Contract<br>Method<br>& Type     | Performing<br>Activity & Location                   | Prior<br>Years | Cost  | Award<br>Date | Cost    | Award<br>Date | Cost                           | Award<br>Date      | Cost                                  | Award<br>Date    | Cost             | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| Develop and Conduct<br>Tests and Assessments | nduct MIPR Multiple 26 303 2 508 |   |                | 0.413 |               | 0.500   |               | -                              |                    | 0.500                                 | Continuing       | Continuing       | -                   |               |                                |
|  |                                  | Subtotal  | 26.393         | 2.508 |               | 0.413   |               | 0.500                          |                    | -                                     |                  | 0.500            | Continuing          | Continuing    | N//                            |
|  |                                  |   | Prior<br>Years | FY 2  | 2018          | FY 2    | :019          | FY 2<br>Ba                     |                    |                                       | 2020<br>CO       | FY 2020<br>Total | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
|  |                                  | Project Cost Totals                                 | 140.456        | 9.559 |               | 15.950  |               | 12.595                         |                    | _                                     |                  | 12 595           | Continuing          | Continuing    | N//                            |

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| xhibit R-4, RDT&E Schedule Profile: PB 2020 A<br>ppropriation/Budget Activity<br>040 / 5 |                     |                    | R-1 Pro<br>PE 0604<br>Commu | 4805A /    | Comm      |              | Date: March 2019<br>ect (Number/Name)<br>I Joint Battle Command - Platform<br>C-P) |        |       |     |   |       |     |     |      |  |  |  |
|--|---------------------|--------------------|-----------------------------|------------|-----------|--------------|--|--------|-------|-----|---|-------|-----|-----|------|--|--|--|
| Event Name   | FY 2018             | FY 20              | 019                         | FY 2       | 020       | F            | Y 2021   |        | FY 20 | 022 |   | FY 20 | 023 | FY  | 2024 |  |  |  |
|  | 1 2 3 4             | 1 2                | 3 4 1                       | 2          | 3 4       | 1 :          | 2 3 4  | 1      | 2     | 3 4 | 1 | 2 3   | 3 4 | 1 2 | 3    |  |  |  |
| BFT 3 Systems Engineering Development & Consurtium                                       | RDECOM CERDEC Led V | Vith Jackyster Rev | 1                           |            |           |              |  |        |       |     |   |       |     |     |      |  |  |  |
| Army Expeditionary Warfighter Experiment (AEWE)  |                     | nar moostry r a    | uners.                      |            |           |              |  |        |       |     |   |       |     |     |      |  |  |  |
| AWA 18.1   | -                   |                    |                             |            |           |              |  |        |       |     |   |       |     |     |      |  |  |  |
| CyberBlitz 18  |                     |                    |                             |            |           |              |  |        |       |     |   |       |     |     |      |  |  |  |
| NIE 18.2   | L                   | BC-P as baseline   | e system only               |            |           |              |  |        |       |     |   |       |     |     |      |  |  |  |
| AIC 1.6.0.6  | AIC 1.6.0.6         |                    |                             |            |           |              |  |        |       |     |   |       |     |     |      |  |  |  |
| JBC-P 1.6.0.7  | 1.6                 | 0.7                |                             |            |           |              |  |        |       |     |   |       |     |     |      |  |  |  |
| Army Expeditionary Warfighter Experiment (AEWE) 2  |                     | AEWE               | 19                          |            |           |              |  |        |       |     |   |       |     |     |      |  |  |  |
| BFT 3 Satellite Ground Station Developmental Testing (RDECO                              | M CERDEC Lab based  |                    |                             |            |           |              |  |        |       |     |   |       |     |     |      |  |  |  |
| RFP for BFT 3 SATCOM Regional Gateway (HUB)  |                     | от                 |                             | AFT 3 SATC |           |              | form FY20 BFT  | -3 HUB | RFP   |     |   |       |     |     |      |  |  |  |
| Joint Warfighter Assessment (JWA)  |                     |                    |                             | AWL        |           |              |  |        |       |     |   |       |     |     |      |  |  |  |
| BFT 3 FY18 RIF Unit Experimentation  |                     |                    |                             | FY         | 20 - Deve | opmental     | Operations (De   | evops) |       |     |   |       |     |     |      |  |  |  |
| BFT 3 HUB Contract Award   |                     |                    |                             |            | BET 3     | 2<br>HUB Cor | ntract Award   |        |       |     |   |       |     |     |      |  |  |  |

| Exhibit R-4, RDT&E Schedule Profile: PB 2020 A         | ١rm   | у     |   |  |  |    |                               |      |     |      |     |     |      |      |      |      |   |   |     |     |            | Da   | ate   | : M    | arcł       | ר 20    | 19     |        |      |        |     |
|--|---|-------|---|--|--|----|-------------------------------|------|-----|------|-----|-----|------|------|------|------|---|---|-----|-----|------------|--|-------|--------|------------|---------|--------|--------|------|--------|-----|
| Appropriation/Budget Activity<br>2040 / 5              |   |       |   |  |  | PE | - <b>1 Pr</b><br>E 060<br>omm | )480 | 05A | I Co | mm  | and | 1, C | onti | rol, |      | ) | Ę | 593 |     | Join       | (Number/Name)<br>int Battle Command - Platform |       |        |            |         |        |        |      |        |     |
|  | FY 2018 FY 2019 FY 2020 FY 2021 FY                            |       |   |  |  |    |                               |      |     | v 2  | 0.2 | 2   |      |      | v    | 2023 | 3 |   | E   | 12  | 024        | ٦  |       |        |            |         |        |        |      |        |     |
| Event Name   | 1         2         3         4         1         2         3 |       |   |  |  |    |                               |      |     |      |     |     |      |      | 3    | 4    | 1 |   |     |     | 4          | 1  |       | 2      | 3          |         | 1      |        |      | 3 4    | 1   |
| BFT 3 Transceiver Developmental Testing (RDECOM CERDEC | Lab   | based | ) |  |  |    |                               |      |     |      |     |     |      |      |      |      |   |   | D   | TFY | 21 - I     | Interna  | al Go | ovt La | b test     | ting to | furthe | r info | rm F | Y20 BF | т-з |
| RFP for BFT 3 Transceiver                              |   |       |   |  |  |    |                               |      |     |      |     |     |      |      |      |      |   |   |     | RFF | 3<br>for E | в тз   | Tran  | isceiv | er         |         |        |        |      |        |     |
| BFT 3 Transceiver Contract Award                       |   |       |   |  |  |    |                               |      |     |      |     |     |      |      |      |      |   |   |     |     |            |  | в     | IFT 3  | 4<br>Trans | sceiver | Contr  | act A  | ward | 1      |     |
| BFT 3/Next Gen HW OT                                   |   |       |   |  |  |    |                               |      |     |      |     |     |      |      |      |      |   |   |     |     |            |  |       |        | PI         | anned   | от - Г | FY23   | /24  |        |     |
|  |   |       |   |  |  |    |                               |      |     |      |     |     |      |      |      |      |   |   |     |     |            |  |       |        |            |         |        |        |      |        |     |
|  |   |       |   |  |  |    |                               |      |     |      |     |     |      |      |      |      |   |   |     |     |            |  |       |        |            |         |        |        |      |        |     |
|  |   |       |   |  |  |    |                               |      |     |      |     |     |      |      |      |      |   |   |     |     |            |  |       |        |            |         |        |        |      |        |     |
|  |   |       |   |  |  |    |                               |      |     |      |     |     |      |      |      |      |   |   |     |     |            |  |       |        |            |         |        |        |      |        |     |
|  |   |       |   |  |  |    |                               |      |     |      |     |     |      |      |      |      |   |   |     |     |            |  |       |        |            |         |        |        |      |        |     |
|  |   |       |   |  |  |    |                               |      |     |      |     |     |      |      |      |      |   |   |     |     |            |  |       |        |            |         |        |        |      |        |     |
|  |   |       |   |  |  |    |                               |      |     |      |     |     |      |      |      |      |   |   |     |     |            |  |       |        |            |         |        |        |      |        |     |
|  |   |       |   |  |  |    |                               |      |     |      |     |     |      |      |      |      |   |   |     |     |            |  |       |        |            |         |        |        |      |        |     |
|  |   |       |   |  |  |    |                               |      |     |      |     |     |      |      |      |      |   |   |     |     |            |  |       |        |            |         |        |        |      |        |     |
|  |   |       |   |  |  |    |                               |      |     |      |     |     |      |      |      |      |   |   |     |     |            |  |       |        |            |         |        |        |      |        |     |
|  |   |       |   |  |  |    |                               |      |     |      |     |     |      |      |      |      |   |   |     |     |            |  |       |        |            |         |        |        |      |        |     |

| Exhibit R-4A, RDT&E Schedule Details: PB 2020 Army |   |  | Date: March 2019 |
|--|---|--|------------------|
| Appropriation/Budget Activity<br>2040 / 5          | <b>R-1 Program Element (Number/Name)</b><br>PE 0604805A / Command, Control,<br>Communications Systems - Eng Dev | <b>Project (Number/Name)</b><br>593 / Joint Battle Command - Platform<br>(JBC-P) |                  |

# Schedule Details

|  | Start   |      | End     |      |
|--|---------|------|---------|------|
| Events   | Quarter | Year | Quarter | Year |
| BFT 3 Systems Engineering Development & Consurtium                             | 2       | 2017 | 4       | 2021 |
| Army Expeditionary Warfighter Experiment (AEWE)                                | 2       | 2018 | 2       | 2018 |
| AWA 18.1   | 3       | 2018 | 3       | 2018 |
| CyberBlitz 18  | 4       | 2018 | 4       | 2018 |
| NIE 18.2   | 4       | 2018 | 1       | 2019 |
| AIC 1.6.0.6  | 2       | 2018 | 4       | 2018 |
| JBC-P 1.6.0.7  | 4       | 2018 | 3       | 2019 |
| Army Expeditionary Warfighter Experiment (AEWE) 2                              | 2       | 2019 | 2       | 2019 |
| BFT 3 Satellite Ground Station Developmental Testing (RDECOM CERDEC Lab based) | 3       | 2019 | 3       | 2019 |
| RFP for BFT 3 SATCOM Regional Gateway (HUB)                                    | 1       | 2020 | 1       | 2020 |
| Joint Warfighter Assessment (JWA)  | 2       | 2020 | 3       | 2020 |
| BFT 3 FY18 RIF Unit Experimentation  | 3       | 2020 | 3       | 2020 |
| BFT 3 HUB Contract Award   | 1       | 2021 | 1       | 2021 |
| BFT 3 Transceiver Developmental Testing (RDECOM CERDEC Lab based)              | 3       | 2022 | 3       | 2022 |
| RFP for BFT 3 Transceiver  | 4       | 2022 | 4       | 2022 |
| BFT 3 Transceiver Contract Award   | 3       | 2023 | 3       | 2023 |
| BFT 3/Next Gen HW OT   | 3       | 2023 | 4       | 2023 |