Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Navy

Date: March 2019

Appropriation/Budget Activity

R-1 Program Element (Number/Name)

1319: Research, Development, Test & Evaluation, Navy I BA 4: Advanced

PE 0304270N I Electronic Warfare Development - MIP

Component Development & Prototypes (ACD&P)

| COST (\$ in Millions) | Prior Years | FY 2018 | FY 2019 | FY 2020 Base | FY 2020 OCO | FY 2020 Total | FY 2021 | FY 2022 | FY 2023 | FY 2024 | Cost To Complete | Total Cost |
|---------------------------|----------------|---------|---------|-----------------|----------------|------------------|---------|---------|---------|---------|---------------------|---------------|
| Total Program Element | 4.968 | 0.527 | 0.466 | 0.609 | - | 0.609 | 0.561 | 0.579 | 0.584 | 0.596 | Continuing | Continuing |
| 2260: Specific Emitter ID | 4.968 | 0.527 | 0.466 | 0.609 | - | 0.609 | 0.561 | 0.579 | 0.584 | 0.596 | Continuing | Continuing |

A. Mission Description and Budget Item Justification

This project supports systems development and collection of Specific Emitter Identification (SEI) information from National Technical Means (NTM) to track commercial ships over 200 gross registered tons world-wide. Research and development will cover improvements and enhancements to Electronic Intelligence technology. This will include improved/next generation SEI technology for miniaturization and automation of hardware, national collection systems, signal processing and analysis, and deinterleaving of signals. Propagation in a multi-path signal environment will also be assessed. All work on this project will be undertaken in pursuit of goals stated by the Office of Naval Intelligence and the National Security Agency in support of the Worldwide Ship Tracking Program.

This PE is a Military Intelligence Program (MIP).

| B. Program Change Summary (\$ in Millions) | FY 2018 | FY 2019 | FY 2020 Base | FY 2020 OCO | FY 2020 Total |
|---|---------|---------|--------------|-------------|---------------|
| Previous President's Budget | 0.527 | 0.466 | 0.552 | - | 0.552 |
| Current President's Budget | 0.527 | 0.466 | 0.609 | - | 0.609 |
| Total Adjustments | 0.000 | 0.000 | 0.057 | - | 0.057 |
| Congressional General Reductions | - | - | | | |
| Congressional Directed Reductions | - | - | | | |
| Congressional Rescissions | - | - | | | |
| Congressional Adds | - | - | | | |
| Congressional Directed Transfers | - | - | | | |
| Reprogrammings | - | - | | | |
| SBIR/STTR Transfer | - | - | | | |
| Rate/Misc Adjustments | 0.000 | 0.000 | 0.057 | - | 0.057 |

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

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| Exhibit R-2A, RDT&E Project Ju | Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy | | | | | | | | | | | | | |
|--|---|---------|---|-----------------|----------------|------------------|--|---------|---------|---------|---------------------|---------------|--|--|
| Appropriation/Budget Activity 1319 / 4 | | _ | am Elemen '0N / Electro ent - MIP | • | , | , , | ect (Number/Name)) I Specific Emitter ID | | | | | | | |
| COST (\$ in Millions) | Prior Years | FY 2018 | FY 2019 | FY 2020 Base | FY 2020 OCO | FY 2020 Total | FY 2021 | FY 2022 | FY 2023 | FY 2024 | Cost To Complete | Total Cost | | |
| 2260: Specific Emitter ID | 4.968 | 0.527 | 0.466 | 0.609 | - | 0.609 | 0.561 | 0.579 | 0.584 | 0.596 | Continuing | Continuing | | |
| Quantity of RDT&E Articles | | - | - | - | - | - | - | - | - | - | | | | |

A. Mission Description and Budget Item Justification

This project supports systems development and collection of Specific Emitter Identification (SEI) information from National Technical Means (NTM) to track commercial ships over 200 gross registered tons world-wide. Research and development will cover improvements and enhancements to Electronic Intelligence technology. This will include improved/next generation SEI technology for miniaturization and automation of hardware, national collection systems, signal processing and analysis, and deinterleaving of signals. Propagation in a multi-path signal environment will also be assessed. All work on this project will be undertaken in pursuit of goals stated by the Office of Naval Intelligence and the National Security Agency in support of the Worldwide Ship Tracking Program.

| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each) | | | FY 2020 | FY 2020 | FY 2020 |
|--|---------|---------|---------|---------|---------|
| | FY 2018 | FY 2019 | Base | oco | Total |
| Title: SENSOR FUSION | 0.145 | 0.130 | 0.167 | 0.000 | 0.167 |
| Articles: | - | - | - | - | - |
| Description: This effort supports systems development and information fusion of improved SEI technology for automation of hardware, national collection systems, signal processing and analysis, and de-interleaving of signals. | | | | | |
| FY 2019 Plans: | | | | | |
| This subarea develops SEI technology for automation of hardware, national collection systems, signal processing and analysis, and de-interleaving of signals. | | | | | |
| FY 2020 Base Plans: This subarea develops advanced technologies that support the tracking of commercial ships over 200 gross registered tons through improvements in signal processing, de-interleaving of signals, information fusion, and hardware of national collection systems which employ SEI technology. | | | | | |
| FY 2020 OCO Plans: N/A | | | | | |
| FY 2019 to FY 2020 Increase/Decrease Statement: There is no significant change from FY 2019 to FY 2020. | | | | | |
| Title: SYSTEM AUTOMATION | 0.166 | 0.149 | 0.196 | 0.000 | 0.196 |
| Articles: | - | _ | _ | - | - |

PE 0304270N: *Electronic Warfare Development - MIP* Navy

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| Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy | | | | Date: Marc | ch 2019 | | |
|--|---|---------|---------|-----------------------------------|----------------|------------------|--|
| Appropriation/Budget Activity 1319 / 4 | R-1 Program Element (Number PE 0304270N / Electronic Warfar Development - MIP | | | Number/Name) ecific Emitter ID | | | |
| B. Accomplishments/Planned Programs (\$ in Millions, Article | Quantities in Each) | FY 2018 | FY 2019 | FY 2020 Base | FY 2020 OCO | FY 2020 Total | |
| Description: This effort supports development of an autonomous emitter signal information to a central location. | surveillance system capable of providing | | | | | | |
| FY 2019 Plans: This subarea develops an autonomous surveillance system that p location. | rovides emitter signal information to a central | | | | | | |
| FY 2020 Base Plans: This subarea develops technologies that support improvements an capabilities using associated technology that provides emitter signation | | | | | | | |
| FY 2020 OCO Plans: N/A | | | | | | | |
| FY 2019 to FY 2020 Increase/Decrease Statement: There is no significant change from FY 2019 to FY 2020. | | | | | | | |
| Title: TECHNOLOGY REFRESH & COMMUNICATION ENHANC | EMENT Articles: | 0.216 | 0.187 | 0.246 | 0.000 | 0.24 | |
| Description: This effort improves Specific Emitter Identification (Scommunication and tactical use of SEI which will be expanded with | | | | | | | |
| FY 2019 Plans: This subarea improves Specific Emitter Identification (SEI) system tactical use of SEI. | performance, real-time communication and | | | | | | |
| FY 2020 Base Plans: This subarea improves next generation SEI system performance, employment of SEI technology through developmental improveme | | | | | | | |
| FY 2020 OCO Plans: N/A | | | | | | | |
| FY 2019 to FY 2020 Increase/Decrease Statement: | | | | | | | |

PE 0304270N: *Electronic Warfare Development - MIP* Navy

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| Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy | Dat | te: March 2019 | |
|---|--|-----------------|--------------|
| Appropriation/Budget Activity | R-1 Program Element (Number/Name) | Project (Numb | · · · · · / |
| 1319 / 4 | PE 0304270N I Electronic Warfare Development - MIP | 2260 I Specific | E EMITTER ID |

| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each) | FY 2018 | FY 2019 | FY 2020 Base | FY 2020 OCO | FY 2020 Total |
|--|---------|---------|-----------------|----------------|------------------|
| There is no significant change from FY 2019 to FY 2020. | | | | | |
| Accomplishments/Planned Programs Subtotals | 0.527 | 0.466 | 0.609 | 0.000 | 0.609 |

C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

Not applicable.

E. Performance Metrics

MIP Program.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy Date: March 2019 Appropriation/Budget Activity R-1 Program Element (Number/Name) Project (Number/Name) 1319 / 4

PE 0304270N I Electronic Warfare

0.609

Development - MIP

2260 I Specific Emitter ID

0.609 Continuing Continuing

N/A

| Product Developme | nt (\$ in M | illions) | | FY 2 | 2018 | FY 2 | 2019 | | 2020 ase | | 2020 CO | FY 2020 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 | Total Cost | Target Value of Contract |
| NRL | TBD | Not Specified : Not Specified | 4.968 | 0.527 | Jan 2018 | 0.466 | Jan 2019 | 0.609 | Jan 2020 | - | | 0.609 | Continuing | Continuing | Continuing |
| | | Subtotal | 4.968 | 0.527 | | 0.466 | | 0.609 | | - | | 0.609 | Continuing | Continuing | N/A |
| | | | Prior Years | FY 2 | 2018 | FY 2 | 2019 | | 2020 ase | | 2020 CO | FY 2020 Total | Cost To | Total Cost | Target Value of Contract |

0.466

0.527

4.968

Project Cost Totals

Remarks

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| Exhibit R-4, RDT&E Schedule Pro | ofile: F | PB 2 | 020 | Navy | y | | | | | | | | | | | | | | | | | | | Date | : Ma | rch 2 | 2019 |) |
|---|----------|--|-----|------|--------------|------|------|------|--------|----------------|--------------|----------------|------|---------|--|------|----|---------|----|----|---------|----|----|------|------|-------|------|----|
| Appropriation/Budget Activity 1319 / 4 | | R-1 Program Eleme PE 0304270N / Elec Development - MIP | | | | | | | Electi | nt (N ronic | lumk : Wa | oer/N rfare | Namo | €) | Project (Number/Name) 2260 / Specific Emitter ID | | | | | | | | | | | | | |
| Proj 2260 | FY 2018 | | | | FY 2019 FY 2 | | | 2020 | • | | FY | 2021 | | FY 2022 | | | | FY 2023 | | | FY 2024 | | | . | | | | |
| | 1Q | 2Q | 3Q | 4Q | 1Q | 2Q | 3Q | 4Q | 1Q | 2Q | 3Q | 4Q | 1Q | 2Q | 3Q | 4Q | 1Q | 2Q | 3Q | 4Q | 1Q | 2Q | 3Q | 4Q | 1Q | 2Q | 3Q | 4Q |
| Demonstration | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 2020DON - 0304270N - 2260 | I | l | | | | | | l | | l | I | l | l | | | l | l | l | I | l | l | | l | l | l | l | I | |
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| Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy | | Date: March 2019 |
|--|---|----------------------------------|
| Appropriation/Budget Activity 1319 / 4 | , | umber/Name) ecific Emitter ID |

Schedule Details

| | St | art | E | nd |
|---|---------|------|---------|------|
| Events by Sub Project | Quarter | Year | Quarter | Year |
| Proj 2260 | | | | |
| Demonstration: Installation and Testing | 1 | 2019 | 4 | 2024 |