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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Air Force **Date:** May 2021

| Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)</i> | | | | | R-1 Program Element (Number/Name) PE 0604033F / <i>Hypersonics Prototyping</i> | | | | | | | |
|--|--------------------|----------------|----------------|---------------------|--|----------------------|----------------|----------------|----------------|----------------|-------------------------|-------------------|
| COST (\$ in Millions) | Prior Years | FY 2020 | FY 2021 | FY 2022 Base | FY 2022 OCO | FY 2022 Total | FY 2023 | FY 2024 | FY 2025 | FY 2026 | Cost To Complete | Total Cost |
| Total Program Element | - | 566.935 | 386.157 | 438.378 | 0.000 | 438.378 | - | - | - | - | - | - |
| 643882: <i>Air-Launched Rapid Response Weapon (ARRW)</i> | - | 286.000 | 386.157 | 238.262 | 0.000 | 238.262 | - | - | - | - | - | - |
| 643883: <i>Hypersonic Attack Cruise Missile</i> | - | 0.000 | 0.000 | 200.116 | 0.000 | 200.116 | - | - | - | - | - | - |
| 643885: <i>Hypersonic Conventional Strike Weapon (HCSW)</i> | - | 280.935 | 0.000 | 0.000 | 0.000 | 0.000 | - | - | - | - | - | - |

Note

This program, BA 4, PE 0604033F, project 643883, Hypersonic Attack Cruise Missile (HACM), is a new start.

A. Mission Description and Budget Item Justification

The Hypersonics Prototyping program enables integration and demonstration of emerging hypersonic technologies in an operational or operational-like environment to capitalize on successful laboratory hypersonic research and development efforts with high warfighter priority. Integration and demonstration of hypersonic prototypes also allows leadership to make informed strategy and resource decisions for future programs based on the results of such hypersonic prototype demonstrations.

Hypersonic Prototyping enables a key linkage between research and development in the lab and fielding advanced technologies to the warfighter. Under this program, Air-Launched Rapid Response Weapon (ARRW), Hypersonic Conventional Strike Weapon (HCSW), and the Hypersonic Attack Cruise Missile (HACM) will accelerate the technology transfer of hypersonic technologies to enable a responsive, long range strike capability. In FY 2020, the HCSW program was concluded at the completion of the Critical Design Review (CDR) in March 2020.

Hypersonic Attack Cruise Missile (HACM) is a new start for FY 2022.

Throughout this program element will be future hypersonics development, which will incubate and mature new technologies, processes, and resources for the development and demonstration of hypersonic technology including, but not limited to, infrastructure advancements, digital engineering, open systems architecture, modeling and simulation, analytics, and high performance computing environments.

BY funding totals include \$200.116 million requested for the Pacific Defense Initiative.

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| Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)</i> | R-1 Program Element (Number/Name) PE 0604033F / <i>Hypersonics Prototyping</i> |
|--|--|

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Hypersonic Prototyping weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F. In PY 6.642 million and in CY 4.143 million was expended for civilian pay expenses in this program element.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

| B. Program Change Summary (\$ in Millions) | FY 2020 | FY 2021 | FY 2022 Base | FY 2022 OCO | FY 2022 Total |
|---|----------------|----------------|---------------------|--------------------|----------------------|
| Previous President's Budget | 576.000 | 381.862 | 198.898 | 0.000 | 198.898 |
| Current President's Budget | 566.935 | 386.157 | 438.378 | 0.000 | 438.378 |
| Total Adjustments | -9.065 | 4.295 | 239.480 | 0.000 | 239.480 |
| • Congressional General Reductions | 0.000 | -0.705 | | | |
| • Congressional Directed Reductions | 0.000 | 0.000 | | | |
| • Congressional Rescissions | 0.000 | 0.000 | | | |
| • Congressional Adds | 0.000 | 5.000 | | | |
| • Congressional Directed Transfers | 0.000 | 0.000 | | | |
| • Reprogrammings | 0.000 | 0.000 | | | |
| • SBIR/STTR Transfer | -9.065 | 0.000 | | | |
| • Other Adjustments | 0.000 | 0.000 | 239.480 | 0.000 | 239.480 |

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 643882: *Air-Launched Rapid Response Weapon (ARRW)*

Congressional Add: *Program increase - Air-launched rapid response weapon*

Congressional Add Subtotals for Project: 643882

Project: 643885: *Hypersonic Conventional Strike Weapon (HCSW)*

Congressional Add: *Program Increase - Hypersonic Conventional Strike Weapon*

Congressional Add Subtotals for Project: 643885

Congressional Add Totals for all Projects

| | FY 2020 | FY 2021 |
|--|----------------|----------------|
| | 0.000 | 5.000 |
| | 0.000 | 5.000 |
| | 0.000 | - |
| | 0.000 | - |
| | 0.000 | 5.000 |

Change Summary Explanation

Other Adjustments increase in FY 2022 of \$239.480 million. \$200.116 million is for the HACM new start program. The additional \$39.364 million is for the ARRW program.

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| Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force | | | | | | | | | | Date: May 2021 | | |
| Appropriation/Budget Activity 3600 / 4 | | | | | R-1 Program Element (Number/Name) PE 0604033F / <i>Hypersonics Prototyping</i> | | | | Project (Number/Name) 643882 / <i>Air-Launched Rapid Response Weapon (ARRW)</i> | | | |
| COST (\$ in Millions) | Prior Years | FY 2020 | FY 2021 | FY 2022 Base | FY 2022 OCO | FY 2022 Total | FY 2023 | FY 2024 | FY 2025 | FY 2026 | Cost To Complete | Total Cost |
| 643882: <i>Air-Launched Rapid Response Weapon (ARRW)</i> | - | 286.000 | 386.157 | 238.262 | 0.000 | 238.262 | - | - | - | - | - | - |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

A. Mission Description and Budget Item Justification

The Air-Launched Rapid Response Weapon (ARRW) project integrates Air Force and DARPA enabled system technologies into a prototype that will demonstrate the viability of this concept to be fielded as a long range prompt strike capability. ARRW will design, develop, manufacture, and test, a number of prototype vehicles to inform decisions concerning ARRW acquisition and production.

Future hypersonics development will incubate and mature new technology, processes, and resources for the development and demonstration of hypersonic technology including, but not limited to, infrastructure advancements, digital engineering, open systems architecture, modeling and simulation, analytics, and high performance computing environments.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Air-Launched Rapid Response Weapon (ARRW) weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F.

B. Accomplishments/Planned Programs (\$ in Millions)

| | FY 2020 | FY 2021 | FY 2022 Base | FY 2022 OCO | FY 2022 Total |
|--|----------------|----------------|---------------------|--------------------|----------------------|
| Title: Air Launched Rapid Response Weapon (ARRW) | 286.000 | 381.157 | 238.262 | - | 238.262 |
| Description: Integrates Air Force and DARPA enabled system technologies into a prototype that will demonstrate the viability of this concept to be fielded as a long range prompt strike capability. ARRW will design, develop, manufacture, and test, a number of prototype vehicles to inform decisions concerning ARRW acquisition and production. | | | | | |
| FY 2021 Plans: Continue with ARRW booster test flights. Manufacture and begin testing of the ARRW all-up round test vehicles. | | | | | |
| FY 2022 Base Plans: Complete manufacture and flight test of ARRW all-up round test vehicles; transition program to early operational capability. | | | | | |
| FY 2021 to FY 2022 Increase/Decrease Statement: | | | | | |

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| Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force | | Date: May 2021 |
| Appropriation/Budget Activity 3600 / 4 | R-1 Program Element (Number/Name) PE 0604033F / <i>Hypersonics Prototyping</i> | Project (Number/Name) 643882 / <i>Air-Launched Rapid Response Weapon (ARRW)</i> |

| B. Accomplishments/Planned Programs (\$ in Millions) | FY 2020 | FY 2021 | FY 2022 Base | FY 2022 OCO | FY 2022 Total |
|--|----------------|----------------|---------------------|--------------------|----------------------|
| FY 2022 decreased compared to FY 2021 by \$142.895 million. Funding decreased due to near program completion and transition to early operational capability. | | | | | |
| Accomplishments/Planned Programs Subtotals | 286.000 | 381.157 | 238.262 | - | 238.262 |
| | FY 2020 | FY 2021 | | | |
| Congressional Add: Program increase - Air-launched rapid response weapon | 0.000 | 5.000 | | | |
| FY 2020 Accomplishments: Not applicable | | | | | |
| FY 2021 Plans: Conducted congressionally directed efforts to improve critical technology supplier base. | | | | | |
| Congressional Adds Subtotals | 0.000 | 5.000 | | | |

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

N/A

Remarks

Program office may require temporary relocatable structures for expansion to support workforce and meet mission requirements.

D. Acquisition Strategy

Acquisition Decision Memorandum (signed 3 May 2018) designated Air-Launched Rapid Response Weapon (ARRW) as Section 804 Rapid Prototyping Program.

The Air Force awarded in August 2018 an undefinitized contract in order to complete a critical design review and procure all long lead parts and materials. The ARRW Program definitized this contract December 2019 to include the entire RDT&E effort (through the end of flight test). The cost type contract includes schedule incentives. The government agency responsible for managing this program is the Air Force Life Cycle Management Center, Armament Directorate, Eglin AFB, FL.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force **Date:** May 2021

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| Appropriation/Budget Activity 3600 / 4 | R-1 Program Element (Number/Name) PE 0604033F / <i>Hypersonics Prototyping</i> | Project (Number/Name) 643882 / <i>Air-Launched Rapid Response Weapon (ARRW)</i> |
|--|--|---|

| Product Development (\$ in Millions) | | | | FY 2020 | | FY 2021 | | FY 2022 Base | | FY 2022 OCO | | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|-----------------------------------|---|--------------------|----------------|-------------------|----------------|-------------------|---------------------|-------------------|--------------------|-------------------|----------------------|-------------------------|-------------------|---------------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| ARRW - Contract | C/CPFF | LMCO: Various : TBD | - | 233.355 | Feb 2020 | 317.853 | Feb 2021 | 163.830 | Feb 2022 | - | | 163.830 | - | - | - |
| ARRW - Mission Planning | C/CPFF | Boeing: Tapestry : TBD | - | 1.000 | Mar 2020 | 1.565 | Mar 2021 | 0.950 | Mar 2022 | - | | 0.950 | - | - | - |
| ARRW - Aircraft Integration | Various | Various : TBD | - | 10.650 | Dec 2019 | 13.998 | Dec 2020 | 0.524 | Dec 2021 | - | | 0.524 | - | - | - |
| Congressional Add | TBD | TBD : TBD | - | - | | 5.000 | Jun 2021 | - | | - | | - | - | - | - |
| Subtotal | | | | - | | 245.005 | | 338.416 | | 165.304 | | 165.304 | - | - | N/A |

Remarks
ARRW - This effort is part of the DARPA Other Transaction Authority (OTA) and Air Force contracts.

| Support (\$ in Millions) | | | | FY 2020 | | FY 2021 | | FY 2022 Base | | FY 2022 OCO | | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|------------------------------------|-----------------------------------|---|--------------------|----------------|-------------------|----------------|-------------------|---------------------|-------------------|--------------------|-------------------|----------------------|-------------------------|-------------------|---------------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| Direct Cite Authority Civilian Pay | Allot | Not specified. : TBD | - | 3.483 | Oct 2019 | 4.143 | Oct 2020 | - | | - | | - | - | - | - |
| Subtotal | | | | - | | 3.483 | | 4.143 | | - | | - | - | - | N/A |

| Test and Evaluation (\$ in Millions) | | | | FY 2020 | | FY 2021 | | FY 2022 Base | | FY 2022 OCO | | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|-----------------------------------|---|--------------------|----------------|-------------------|----------------|-------------------|---------------------|-------------------|--------------------|-------------------|----------------------|-------------------------|-------------------|---------------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| ARRW - Government Test | Various | Various : TBD | - | 31.094 | May 2020 | 36.158 | May 2021 | 59.275 | May 2022 | - | | 59.275 | - | - | - |
| Subtotal | | | | - | | 31.094 | | 36.158 | | 59.275 | | 59.275 | - | - | N/A |

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| Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force | | | | | | | | | | | Date: May 2021 | | | | |
| Appropriation/Budget Activity 3600 / 4 | | | | | | R-1 Program Element (Number/Name) PE 0604033F / <i>Hypersonics Prototyping</i> | | | | | Project (Number/Name) 643882 / <i>Air-Launched Rapid Response Weapon (ARRW)</i> | | | | |

| Management Services (\$ in Millions) | | | | FY 2020 | | FY 2021 | | FY 2022 Base | | FY 2022 OCO | | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|-----------------------------------|---|--------------------|----------------|-------------------|----------------|-------------------|---------------------|-------------------|--------------------|-------------------|----------------------|-------------------------|-------------------|---------------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| ARRW - Program Management Administration | Various | Multiple : TBD | - | 6.418 | Sep 2020 | 7.440 | Sep 2021 | 13.683 | Sep 2022 | - | | 13.683 | - | - | - |
| Subtotal | | | - | 6.418 | | 7.440 | | 13.683 | | - | | 13.683 | - | - | N/A |

Remarks
Includes A&AS support requirements plus TDY, and office supplies.

| Prior Years | FY 2020 | FY 2021 | FY 2022 Base | FY 2022 OCO | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract | |
|----------------------------|----------------|----------------|---------------------|--------------------|----------------------|-------------------------|-------------------|---------------------------------|-----|
| Project Cost Totals | - | 286.000 | 386.157 | 238.262 | - | 238.262 | - | - | N/A |

Remarks
Additional details on Hypersonics prototyping concepts can be provided in the appropriate forum.

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| Exhibit R-4A, RDT&E Schedule Details: PB 2022 Air Force | | Date: May 2021 |
| Appropriation/Budget Activity 3600 / 4 | R-1 Program Element (Number/Name) PE 0604033F / <i>Hypersonics Prototyping</i> | Project (Number/Name) 643882 / <i>Air-Launched Rapid Response Weapon (ARRW)</i> |

Schedule Details

| Events by Sub Project | Start | | End | |
|---|---------|------|---------|------|
| | Quarter | Year | Quarter | Year |
| <i>Air Launched Rapid Response Weapon (ARRW)</i> | | | | |
| ARRW- Contract | 1 | 2020 | 4 | 2022 |
| Design and Preliminary Design Review | 1 | 2020 | 2 | 2020 |
| Design and Critical Design Review | 2 | 2020 | 4 | 2020 |
| Flight Tests | 3 | 2020 | 4 | 2022 |
| Program Management Administration | 1 | 2020 | 2 | 2023 |

Note

Further schedule details can be provided in the appropriate forum.

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force **Date:** May 2021

| Appropriation/Budget Activity 3600 / 4 | | | | | R-1 Program Element (Number/Name) PE 0604033F / Hypersonics Prototyping | | | | Project (Number/Name) 643883 / Hypersonic Attack Cruise Missile | | | |
|---|-------------|---------|---------|--------------|--|---------------|---------|---------|--|---------|------------------|------------|
| COST (\$ in Millions) | Prior Years | FY 2020 | FY 2021 | FY 2022 Base | FY 2022 OCO | FY 2022 Total | FY 2023 | FY 2024 | FY 2025 | FY 2026 | Cost To Complete | Total Cost |
| 643883: Hypersonic Attack Cruise Missile | - | 0.000 | 0.000 | 200.116 | 0.000 | 200.116 | - | - | - | - | - | - |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

Note

This program, BA 4, PE 0604033F, project 643883, Hypersonic Attack Cruise Missile (HACM), is a new start.

A. Mission Description and Budget Item Justification

Hypersonic Attack Cruise Missile (HACM) is a new start for FY 2022.

The HACM project integrates Air Force and Defense Advanced Research Projects Agency (DARPA) enabled system technologies into a prototype that will demonstrate the viability of a multi-mission weapon concept to be fielded as a long range prompt strike capability. HACM will design, develop, manufacture, and test, a number of prototype vehicles to inform decisions concerning future HACM acquisition and production.

Future hypersonics development will incubate and mature new technology, processes, and resources for the development and demonstration of hypersonic technology including, but not limited to, infrastructure advancements, digital engineering, open systems architecture, modeling and simulation, analytics, and high performance computing environments.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver HACM weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F.

BY funding totals include \$200.1M requested for the Pacific Defense Initiative.

B. Accomplishments/Planned Programs (\$ in Millions)

| | FY 2020 | FY 2021 | FY 2022 Base | FY 2022 OCO | FY 2022 Total |
|--|---------|---------|--------------|-------------|---------------|
| <p>Title: Hypersonic Attack Cruise Missile (HACM)</p> <p>Description: Integrates Air Force enabled system technologies into a prototype that will demonstrate the viability of a multi-mission weapon concept to be fielded as a long range prompt strike capability. Hypersonic Attack Cruise Missile (HACM) will design, develop, manufacture, and test, a number of prototype vehicles to inform decisions concerning HACM acquisition and production.</p> <p>HACM is a new start for FY 2022.</p> <p>FY 2021 Plans:</p> | - | 0.000 | 200.116 | 0.000 | 200.116 |

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| Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force | Date: May 2021 |
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| Appropriation/Budget Activity 3600 / 4 | R-1 Program Element (Number/Name) PE 0604033F / <i>Hypersonics Prototyping</i> | Project (Number/Name) 643883 / <i>Hypersonic Attack Cruise Missile</i> |
|--|--|--|

| B. Accomplishments/Planned Programs (\$ in Millions) | FY 2020 | FY 2021 | FY 2022 Base | FY 2022 OCO | FY 2022 Total |
|--|---------|---------|--------------|-------------|---------------|
| N/A | | | | | |
| <i>FY 2022 Base Plans:</i> Contract Award, Digital System Modeling, Weapons Open System Architecture (WOSA) Evaluation, begin Operational Flight Program (OFP) Development, begin building aircraft integration assets, conduct Wind Tunnel Testing. | | | | | |
| <i>FY 2022 OCO Plans:</i> N/A | | | | | |
| <i>FY 2021 to FY 2022 Increase/Decrease Statement:</i> Funding increased because initial funding for program will be received in FY 2022. | | | | | |
| Accomplishments/Planned Programs Subtotals | - | 0.000 | 200.116 | 0.000 | 200.116 |

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

Remarks

D. Acquisition Strategy
 Will submit formal HACM strategy as part of Acquisition Strategy Panel (ASP) in FY 2021.

 The ability to execute HACM development is contingent upon fully funded and successful predecessor capability development efforts.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force **Date:** May 2021

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| Appropriation/Budget Activity 3600 / 4 | R-1 Program Element (Number/Name) PE 0604033F / <i>Hypersonics Prototyping</i> | Project (Number/Name) 643883 / <i>Hypersonic Attack Cruise Missile</i> |
|--|--|--|

| Product Development (\$ in Millions) | | | | FY 2020 | | FY 2021 | | FY 2022 Base | | FY 2022 OCO | | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|------------------------|---------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| Hypersonic program office support, analysis, technical risk reduction, and development. | C/CPFF | Multiple: TBD: Various : TBD | - | - | | - | | 167.065 | Mar 2022 | - | | 167.065 | - | - | - |
| Subtotal | | | - | - | | - | | 167.065 | | - | | 167.065 | - | - | N/A |

| Support (\$ in Millions) | | | | FY 2020 | | FY 2021 | | FY 2022 Base | | FY 2022 OCO | | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|------------------------------------|------------------------|---------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| Development & Prototyping | C/CPFF | Multiple: TBD: Various : TBD | - | - | | - | | 4.937 | Dec 2021 | - | | 4.937 | - | - | - |
| Direct Cite Authority Civilian Pay | Allot | Not specified : TBD : TBD | - | - | | - | | 4.663 | Oct 2021 | - | | 4.663 | - | - | - |
| Subtotal | | | - | - | | - | | 9.600 | | - | | 9.600 | - | - | N/A |

| Test and Evaluation (\$ in Millions) | | | | FY 2020 | | FY 2021 | | FY 2022 Base | | FY 2022 OCO | | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|------------------------|---------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| Test and Evaluation | C/CPAF | Multiple: TBD: Various : TBD | - | - | | - | | 11.689 | Nov 2021 | - | | 11.689 | - | - | - |
| Subtotal | | | - | - | | - | | 11.689 | | - | | 11.689 | - | - | N/A |

| Management Services (\$ in Millions) | | | | FY 2020 | | FY 2021 | | FY 2022 Base | | FY 2022 OCO | | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|------------------------|---------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| Management Services | C/TBD | Multiple: TBD: Various : TBD | - | - | | - | | 6.762 | Oct 2021 | - | | 6.762 | - | - | - |
| Temporary Relocatable Structure | C/TBD | Not specified : TBD : TBD | - | - | | - | | 5.000 | Oct 2021 | - | | 5.000 | - | - | - |

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Exhibit R-4, RDT&E Schedule Profile: PB 2022 Air Force **Date:** May 2021

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| Appropriation/Budget Activity 3600 / 4 | R-1 Program Element (Number/Name) PE 0604033F / <i>Hypersonics Prototyping</i> | Project (Number/Name) 643883 / <i>Hypersonic Attack Cruise Missile</i> |
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| | FY 2020 | | | | FY 2021 | | | | FY 2022 | | | | FY 2023 | | | | FY 2024 | | | | FY 2025 | | | | FY 2026 | | | |
|--|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|
| | 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 |

| | |
|---|------------|
| <i>Hypersonic Attack Cruise Missile (HACM)</i> | |
| Critical Design Review | [REDACTED] |

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| Exhibit R-4A, RDT&E Schedule Details: PB 2022 Air Force | | Date: May 2021 |
| Appropriation/Budget Activity 3600 / 4 | R-1 Program Element (Number/Name) PE 0604033F / <i>Hypersonics Prototyping</i> | Project (Number/Name) 643883 / <i>Hypersonic Attack Cruise Missile</i> |

Schedule Details

| Events by Sub Project | Start | | End | |
|---|---------|------|---------|------|
| | Quarter | Year | Quarter | Year |
| <i>Hypersonic Attack Cruise Missile (HACM)</i> | | | | |
| Critical Design Review | 3 | 2022 | 3 | 2023 |

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|---|--------------------|----------------|----------------|---------------------|--|----------------------|----------------|----------------|--|-----------------------|-------------------------|-------------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force | | | | | | | | | | Date: May 2021 | | |
| Appropriation/Budget Activity 3600 / 4 | | | | | R-1 Program Element (Number/Name) PE 0604033F / <i>Hypersonics Prototyping</i> | | | | Project (Number/Name) 643885 / <i>Hypersonic Conventional Strike Weapon (HCSW)</i> | | | |
| COST (\$ in Millions) | Prior Years | FY 2020 | FY 2021 | FY 2022 Base | FY 2022 OCO | FY 2022 Total | FY 2023 | FY 2024 | FY 2025 | FY 2026 | Cost To Complete | Total Cost |
| 643885: <i>Hypersonic Conventional Strike Weapon (HCSW)</i> | - | 280.935 | 0.000 | 0.000 | 0.000 | 0.000 | - | - | - | - | - | - |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

A. Mission Description and Budget Item Justification

The Hypersonic Conventional Strike Weapon (HCSW) Project integrates Air Force, Strategic Capabilities Office, and Conventional Prompt Strike (CPS) glide body into a prototype that will demonstrate the viability of this concept to be fielded as a long range prompt strike capability. HCSW will design, develop, manufacture, and test, a number of prototype vehicles to inform decisions concerning future HCSW acquisition and production.

In FY 2020, the HCSW program was concluded at the completion of Critical Design Review (CDR) in March 2020.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver HCSW weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F. In PY \$3.501M and in CY \$0.000M was expended for civilian pay expenses in this program element.

B. Accomplishments/Planned Programs (\$ in Millions)

| | FY 2020 | FY 2021 | FY 2022 Base | FY 2022 OCO | FY 2022 Total |
|--|----------------|----------------|---------------------|--------------------|----------------------|
| Title: Hypersonic Conventional Strike Weapon (HCSW) | 280.935 | 0.000 | 0.000 | - | 0.000 |
| Description: Integrates Air Force enabled system technologies into a prototype that will demonstrate the viability of this concept to be fielded as a long range prompt strike capability. Hypersonic Conventional Strike Weapon (HCSW) will design, develop, manufacture, and test, a number of prototype vehicles to inform decisions concerning HCSW acquisition and production. | | | | | |
| In FY 2019, HCSW completed System Requirements Review (SRR) and Preliminary Design Review (PDR). In FY 2020, the HCSW program concluded at the completion of Critical Design Review (CDR) in March 2020. | | | | | |
| FY 2021 Plans: No activities planned for FY 2021 due to program completion in March 2020. | | | | | |
| FY 2022 Base Plans: No activities planned for FY 2022 due to program completion in March 2020. | | | | | |
| Accomplishments/Planned Programs Subtotals | 280.935 | 0.000 | 0.000 | - | 0.000 |

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|---|--|--|
| Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force | | Date: May 2021 |
| Appropriation/Budget Activity 3600 / 4 | R-1 Program Element (Number/Name) PE 0604033F / <i>Hypersonics Prototyping</i> | Project (Number/Name) 643885 / <i>Hypersonic Conventional Strike Weapon (HCSW)</i> |

| | FY 2020 | FY 2021 |
|--|---------|---------|
| Congressional Add: Program Increase - Hypersonic Conventional Strike Weapon | 0.000 | - |
| FY 2020 Accomplishments: Not Applicable | | |
| Congressional Adds Subtotals | 0.000 | - |

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

N/A

Remarks

D. Acquisition Strategy

Acquisition Decision Memorandum (signed 3 May 2018) designated Hypersonic Conventional Strike Weapon (HCSW) as Section 804 Rapid Prototyping Program.

In April 2018, the Air Force awarded an Indefinite Delivery/Indefinite Quantity to Lockheed Martin Corporation Space for the design, development, engineering, systems integration, test, logistics, planning, and aircraft integration support of all the elements of a hypersonic, conventional, air-launched, stand-off weapon. The government agency responsible for managing this program is the Air Force Life Cycle Management Center, Armament Directorate, Eglin AFB, FL.

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| Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force | | | | | | | | | | | | Date: May 2021 | | | | |
|---|------------------------|----------------------------------|-------------|---------------------------------------|------------|---------|------------|---|------------|-------------|------------|----------------|------------------|------------|--------------------------|--|
| Appropriation/Budget Activity | | | | R-1 Program Element (Number/Name) | | | | Project (Number/Name) | | | | | | | | |
| 3600 / 4 | | | | PE 0604033F / Hypersonics Prototyping | | | | 643885 / Hypersonic Conventional Strike Weapon (HCSW) | | | | | | | | |
| Product Development (\$ in Millions) | | | | FY 2020 | | FY 2021 | | FY 2022 Base | | FY 2022 OCO | | FY 2022 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 | |
| Hypersonic program office support, analysis, technical risk reduction, and development. | C/CPFF | Lockheed Martin : Huntsville, AL | - | 270.589 | Nov 2019 | - | | - | | - | | - | - | - | - | |
| Subtotal | | | - | 270.589 | | - | | - | | - | | - | - | - | N/A | |
| Support (\$ in Millions) | | | | FY 2020 | | FY 2021 | | FY 2022 Base | | FY 2022 OCO | | FY 2022 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 | |
| Development & Prototyping | C/CPFF | Multiple: TBD : Various | - | 0.717 | Nov 2019 | - | | - | | - | | - | - | - | - | |
| Direct Cite Authority Civilian Pay | Allot | Not specified : TBD : TBD | - | 3.501 | Oct 2019 | - | | - | | - | | - | - | - | - | |
| Subtotal | | | - | 4.218 | | - | | - | | - | | - | - | - | N/A | |
| Test and Evaluation (\$ in Millions) | | | | FY 2020 | | FY 2021 | | FY 2022 Base | | FY 2022 OCO | | FY 2022 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 | |
| Test and Evaluation | C/CPAF | Multiple: TBD : Various | - | 5.598 | Jan 2020 | - | | - | | - | | - | - | - | - | |
| Subtotal | | | - | 5.598 | | - | | - | | - | | - | - | - | N/A | |
| Management Services (\$ in Millions) | | | | FY 2020 | | FY 2021 | | FY 2022 Base | | FY 2022 OCO | | FY 2022 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 | |
| Management Services | C/TBD | Multiple: TBD : Various | - | 0.530 | Mar 2020 | - | | - | | - | | - | - | - | - | |
| Subtotal | | | - | 0.530 | | - | | - | | - | | - | - | - | N/A | |

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force **Date:** May 2021

| | | |
|--|--|--|
| Appropriation/Budget Activity 3600 / 4 | R-1 Program Element (Number/Name) PE 0604033F / <i>Hypersonics Prototyping</i> | Project (Number/Name) 643885 / <i>Hypersonic Conventional Strike Weapon (HCSW)</i> |
|--|--|--|

| Management Services (\$ in Millions) | | | | FY 2020 | | FY 2021 | | FY 2022 Base | | FY 2022 OCO | | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|------------------------|--------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |

Remarks
Includes A&AS support requirements, TDY, office supplies, and assessed penalties/withholds.

| | Prior Years | FY 2020 | FY 2021 | FY 2022 Base | FY 2022 OCO | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|----------------------------|-------------|---------|---------|--------------|-------------|---------------|------------------|------------|--------------------------|
| Project Cost Totals | - | 280.935 | 0.000 | - | - | - | - | - | N/A |

Remarks

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| | | |
|--|--|--|
| Exhibit R-4A, RDT&E Schedule Details: PB 2022 Air Force | | Date: May 2021 |
| Appropriation/Budget Activity 3600 / 4 | R-1 Program Element (Number/Name) PE 0604033F / <i>Hypersonics Prototyping</i> | Project (Number/Name) 643885 / <i>Hypersonic Conventional Strike Weapon (HCSW)</i> |

Schedule Details

| Events by Sub Project | Start | | End | |
|--|---------|------|---------|------|
| | Quarter | Year | Quarter | Year |
| <i>Hypersonic Conventional Strike Weapon (HCSW)</i> | | | | |
| Design and Preliminary Design Review | 1 | 2020 | 1 | 2020 |
| Critical Design Review | 1 | 2020 | 2 | 2020 |

Note

Further schedule details can be provided in the appropriate forum.