Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force

Date: February 2018

Appropriation/Budget Activity

R-1 Program Element (Number/Name)

3600: Research, Development, Test & Evaluation, Air Force I BA 6: RDT&E

PE 0605978F I Facilities Sustainment - Test and Evaluation Support

Management Support

|                                              | •              |         |         |                 |                |                  |         |         |         |         |                     |               |  |
|----------------------------------------------|----------------|---------|---------|-----------------|----------------|------------------|---------|---------|---------|---------|---------------------|---------------|--|
| COST (\$ in Millions)                        | Prior<br>Years | FY 2017 | FY 2018 | FY 2019<br>Base | FY 2019<br>OCO | FY 2019<br>Total | FY 2020 | FY 2021 | FY 2022 | FY 2023 | Cost To<br>Complete | Total<br>Cost |  |
| Total Program Element                        | -              | 28.091  | 28.720  | 28.888          | 0.000          | 28.888           | 29.424  | 29.935  | 30.555  | 31.112  | Continuing          | Continuing    |  |
| 6606MR: Facility Sustainment-<br>T&E Support | -              | 28.091  | 28.720  | 28.888          | 0.000          | 28.888           | 29.424  | 29.935  | 30.555  | 31.112  | Continuing          | Continuing    |  |
| Quantity of RDT&E Articles                   | -              | -       | -       | -               | -              | -                | -       | -       | -       | -       |                     |               |  |

### A. Mission Description and Budget Item Justification

Provides resources for sustainment activities required for an inventory of Air Force Material Command (AFMC) Test and Evaluation (T&E) facilities. Facility sustainment includes regularly scheduled adjustments and inspections, preventative maintenance tasks, and emergency response and service calls for minor repairs. It also includes major repairs or replacement of facility components that are expected to occur periodically. In addition to standard facility sustainment, such as roof replacement, refinishing of wall and floor surfaces, and repairing and replacing of heating and cooling systems, this work includes inspections and repairs of heavy plant machinery in large industrial facilities. This work includes, but is not limited to, inspection and repair of high-power electrical switching gear, hydraulic, lubrication, forced-air and fluid cooling systems, high pressure vessel health monitoring, facility control and remote monitoring systems, liquid oxygen systems, steam systems, test instrumentation, and fire detection and suppression systems. Other tasks associated with facilities operations (such as custodial services, grass cutting, and landscaping, waste disposal, and the provision of central utilities) are not included. These sustainment funds support the following Air Force organizations and their associated test and evaluation facilities, including: remote locations, the 96th Test Wing (TW) at Eglin AFB, FL, Arnold Engineering and Development Complex (AEDC) at Arnold AFB, TN, AEDC's 704th Test Group (TG) at Holloman AFB, NM, AEDC's 704 TG Landing Gear Test Facility (LGTF) at Wright-Patterson AFB, OH, AEDC's Hypersonic Wind Tunnel 9 at White Oak, MD, AEDC's National Full-Scale Aerodynamics Complex (NFAC) at Moffett Field, CA, AEDC's McKinley Climatic Laboratory (MCL) at Eglin AFB, FL and the 412 Test Wing (TW) at Edwards AFB, CA.

This program is in Budget Activity 6, RDT&E Management Support, because this budget activity includes research, development, test and evaluation efforts and funds to sustain and/or modernize the installations or operations required for general research, development, test and evaluation.

PE 0605978F: Facilities Sustainment - Test and Evalua... Air Force UNCLASSIFIED
Page 1 of 4

R-1 Line #149

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| B. Program Change Summary (\$ in Millions)            | FY 2017 | FY 2018 | FY 2019 Base | FY 2019 OCO | FY 2019 Total |
|-------------------------------------------------------|---------|---------|--------------|-------------|---------------|
| Previous President's Budget                           | 28.091  | 28.720  | 29.105       | 0.000       | 29.105        |
| Current President's Budget                            | 28.091  | 28.720  | 28.888       | 0.000       | 28.888        |
| Total Adjustments                                     | 0.000   | 0.000   | -0.217       | 0.000       | -0.217        |
| <ul> <li>Congressional General Reductions</li> </ul>  | 0.000   | 0.000   |              |             |               |
| <ul> <li>Congressional Directed Reductions</li> </ul> | 0.000   | 0.000   |              |             |               |
| <ul> <li>Congressional Rescissions</li> </ul>         | 0.000   | 0.000   |              |             |               |
| <ul> <li>Congressional Adds</li> </ul>                | 0.000   | 0.000   |              |             |               |
| <ul> <li>Congressional Directed Transfers</li> </ul>  | 0.000   | 0.000   |              |             |               |
| Reprogrammings                                        | 0.000   | 0.000   |              |             |               |
| SBIR/STTR Transfer                                    | 0.000   | 0.000   |              |             |               |
| Other Adjustments                                     | 0.000   | 0.000   | -0.217       | 0.000       | -0.217        |

# **Change Summary Explanation**

FY19: \$.217 million decrease due to inflation adjustment.

| C. Accomplishments/Planned Programs (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                          | FY 2017 | FY 2018 | FY 2019 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------|---------|
| Title: Facility sustainment at the 96 TW.                                                                                                                                                                                                                                                                                                                                                                     | 1.311   | 0.791   | 1.051   |
| Description: Facility sustainment at the 96 TW.                                                                                                                                                                                                                                                                                                                                                               |         |         |         |
| FY 2018 Plans: Continue to work through several hundred Direct Scheduled Work Orders (DSWs) within the test infrastructure.                                                                                                                                                                                                                                                                                   |         |         |         |
| FY 2019 Plans: Continue to work through several hundred Direct Scheduled Work Orders (DSWs) within the test infrastructure.                                                                                                                                                                                                                                                                                   |         |         |         |
| FY 2018 to FY 2019 Increase/Decrease Statement: \$0.260 million increase from FY 2018 to FY 2019 due to increase in maintenance cost projections due to aging facilities.                                                                                                                                                                                                                                     |         |         |         |
| Title: Facility sustainment at the AEDC.                                                                                                                                                                                                                                                                                                                                                                      | 24.330  | 25.513  | 25.170  |
| Description: Facility sustainment at the AEDC.                                                                                                                                                                                                                                                                                                                                                                |         |         |         |
| FY 2018 Plans: Continue to perform calendar based scheduled preventative maintenance on Engine Test Facility Plant and associated engine test cells, Propulsion Wind Tunnel Plant and associated wind tunnels, Von Karman Facility (VKF) Plant Core and associated test cells, arc heaters, rocket test facility, space chambers, and hypersonic engine test facilities, along with associated infrastructure |         |         |         |

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|                                                                                                                                                                                                               |                                                 |                                                |                                               | UNCLAS                        |                                           |                              |                               |                  |            |             |            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|------------------------------------------------|-----------------------------------------------|-------------------------------|-------------------------------------------|------------------------------|-------------------------------|------------------|------------|-------------|------------|
| Exhibit R-2, RDT&E Budget Item J                                                                                                                                                                              | ustification:                                   | PB 2019 Aiı                                    | r Force                                       |                               |                                           |                              |                               |                  | Date: Fe   | bruary 2018 |            |
| Appropriation/Budget Activity<br>3600: Research, Development, Test<br>Management Support                                                                                                                      | & Evaluation                                    | , Air Force I                                  | BA 6: <i>RDT</i> &                            |                               | r <b>ogram Eler</b><br>05978F <i>I Fa</i> |                              | er/Name)<br>ainment - Tes     | st and Evalu     | ation Supp | ort         |            |
| C. Accomplishments/Planned Pro                                                                                                                                                                                | grams (\$ in I                                  | Millions)                                      |                                               | ·                             |                                           |                              |                               | F                | Y 2017     | FY 2018     | FY 2019    |
| that supports all test operations. Su conditioning (HVAC) repairs and roo                                                                                                                                     |                                                 |                                                |                                               |                               | et replacem                               | ent, heating,                | ventilation,                  | air              |            |             |            |
| FY 2019 Plans: Continue to perform calendar based test cells, Propulsion Wind Tunnel P cells, arc heaters, rocket test facility that supports all test operations. Su conditioning (HVAC) repairs and rocket. | Plant and asso<br>, space cham<br>stainment pro | ociated wind<br>bers, and hy<br>oject include: | tunnels, Vor<br>personic eng<br>s painting bu | n Karman Fa<br>gine test faci | icility (VKF) lilities, along             | Plant Core a<br>with associa | nd associate<br>ted infrastru | ed test<br>cture |            |             |            |
| FY 2018 to FY 2019 Increase/Decr<br>\$0.343 million decrease from FY 20<br>aging facilities.                                                                                                                  |                                                 |                                                | vious PE 060                                  | 5978F expe                    | enditures for                             | preventative                 | maintenand                    | ce to            |            |             |            |
| Title: Facility sustainment at the 412                                                                                                                                                                        | 2 TW.                                           |                                                |                                               |                               |                                           |                              |                               |                  | 2.450      | 2.416       | 2.667      |
| Description: Facility sustainment at                                                                                                                                                                          | t the 412 TW.                                   |                                                |                                               |                               |                                           |                              |                               |                  |            |             |            |
| FY 2018 Plans: Continue sustainment of test unique Edwards AFB, CA.                                                                                                                                           | infrastructure                                  | e in 412 TW                                    | Electronic W                                  | /arfare, Ranç                 | ge, and othe                              | r T&E faciliti               | es located a                  | t                |            |             |            |
| FY 2019 Plans:<br>Continue sustainment of test unique<br>Edwards AFB, CA.                                                                                                                                     | infrastructure                                  | e in 412 TW                                    | Electronic W                                  | /arfare, Ranç                 | ge, and othe                              | r T&E faciliti               | es located a                  | t                |            |             |            |
| FY 2018 to FY 2019 Increase/Decr<br>\$0.251 million increase from FY 201                                                                                                                                      |                                                 |                                                | ease in maint                                 | enance cost                   | t projections                             | due to aging                 | g facilities.                 |                  |            |             |            |
|                                                                                                                                                                                                               |                                                 |                                                |                                               | Accon                         | nplishment                                | s/Planned P                  | rograms Su                    | ubtotals         | 28.091     | 28.720      | 28.888     |
| D. Other Program Funding Summ                                                                                                                                                                                 | ary (\$ in Milli                                | ons)                                           |                                               |                               |                                           |                              |                               |                  |            |             |            |
|                                                                                                                                                                                                               |                                                 |                                                | FY 2019                                       | FY 2019                       | FY 2019                                   |                              |                               |                  |            | Cost To     |            |
| Line Item                                                                                                                                                                                                     | FY 2017                                         | FY 2018                                        | <u>Base</u>                                   | <u>000</u>                    | Total                                     | FY 2020                      | FY 2021                       | FY 2022          |            | Complete    |            |
| • RDTE 06 PE 0604256F:<br>Threat Simulator Development                                                                                                                                                        | 21.377                                          | 35.405                                         | 34.256                                        | -                             | 34.256                                    | 46.393                       | 42.925                        | 29.444           | 29.977     | Continuing  | Continuing |
| • RDTE 06 PE 0604759F:  Major T&E Investment                                                                                                                                                                  | 64.538                                          | 82.874                                         | 91.844                                        | -                             | 91.844                                    | 181.663                      | 164.005                       | 142.090          | 82.003     | Continuing  | Continuing |

PE 0605978F: Facilities Sustainment - Test and Evalua... Air Force UNCLASSIFIED
Page 3 of 4

R-1 Line #149

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PE 0605978F I Facilities Sustainment - Test and Evaluation Support

Management Support

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

|                                          |         | <i>-</i> | FY 2019     | FY 2019 | FY 2019      |         |         |         | Cost To |                 |                   |
|------------------------------------------|---------|----------|-------------|---------|--------------|---------|---------|---------|---------|-----------------|-------------------|
| <u>Line Item</u>                         | FY 2017 | FY 2018  | <b>Base</b> | OCO     | <u>Total</u> | FY 2020 | FY 2021 | FY 2022 | FY 2023 | <b>Complete</b> | <b>Total Cost</b> |
| <ul> <li>RDTE 06 PE 0605807F:</li> </ul> | 676.417 | 678.289  | 692.784     | -       | 692.784      | 719.900 | 726.015 | 760.319 | 737.765 | Continuing      | Continuing        |
| Test & Evaluation Support                |         |          |             |         |              |         |         |         |         |                 |                   |
| • RDTE 06 PE 0605976F: Facility          | 134.111 | 135.507  | 162.216     | -       | 162.216      | 88.445  | 69.293  | 70.730  | 72.019  | Continuing      | Continuing        |
| 5 ' '' ' '' '' '' ''                     |         |          |             |         |              |         |         |         |         |                 | -                 |

Restoration and Modernization-T&E

#### Remarks

# E. Acquisition Strategy

N/A

## F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

PE 0605978F: Facilities Sustainment - Test and Evalua... Air Force

Page 4 of 4