FAA Partnerships

The tables that follow detail the FAA’s active partnership activities including:

1. Cooperative Research and Development Agreements (CRADAs)
   1.1. Academia
   1.2. Industry
      1.2.1. Industry (International)
      1.2.2. Industry (Small Business)
2. Center of Excellence (COE)
3. Aviation Research Grants
4. Interagency and Other Agreements
5. International Agreements

1. Cooperative Research and Development Agreements

The table below details the FAA’s active Cooperative Research and Development Agreements (CRADA).

1.1 Academia

<table>
<thead>
<tr>
<th>Period of Performance</th>
<th>CRADA Number</th>
<th>Partner</th>
<th>Subject/Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start Date</td>
<td>End Date</td>
<td>Number</td>
<td></td>
</tr>
<tr>
<td>4/29/2020</td>
<td>4/29/2022</td>
<td>20-CRADA-0381</td>
<td>University of Dayton Research Institute</td>
</tr>
<tr>
<td>11/16/2019</td>
<td>11/15/2023</td>
<td>16-CRADA-0340</td>
<td>Rutgers, The State University of New Jersey</td>
</tr>
<tr>
<td>Period of Performance Start Date</td>
<td>Period of Performance End Date</td>
<td>CRADA Number</td>
<td>Partner</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>--------------------------------</td>
<td>--------------</td>
<td>---------</td>
</tr>
<tr>
<td>5/24/2019</td>
<td>6/7/2021</td>
<td>17-CRDA-0348</td>
<td>George Mason University School of Business</td>
</tr>
<tr>
<td>8/15/2018</td>
<td>8/13/2021</td>
<td>18-CRDA-0353</td>
<td>Clarkson University</td>
</tr>
<tr>
<td>7/24/2018</td>
<td>8/1/2023</td>
<td>16-CRDA-0335</td>
<td>Fairfield University</td>
</tr>
<tr>
<td>6/14/2018</td>
<td>6/14/2021</td>
<td>18-CRDA-0350</td>
<td>Rowan University</td>
</tr>
<tr>
<td>4/12/2018</td>
<td>4/12/2021</td>
<td>15-CRDA-0308</td>
<td>Rowan University</td>
</tr>
</tbody>
</table>
## 1.2 Industry

<table>
<thead>
<tr>
<th>Period of Performance</th>
<th>CRADA Number</th>
<th>Partner</th>
<th>Subject/Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Industry (Active in FY 20)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8/3/2020</td>
<td>20-CRADA-0383C (CAMI)</td>
<td>Universal Avionics Systems Corporation</td>
<td>The purpose of this agreement is to conduct Human Performance research using a head-worn Display.</td>
</tr>
<tr>
<td>5/26/2020</td>
<td>20-CRADA-0377</td>
<td>magniX USA, Inc.</td>
<td>The purpose of this agreement is to evaluate the magniX electrical propulsion system to collaboratively advance understanding of the safety risks and hazards associated with use of this technology in aircraft as the primary source of propulsion. In addition, this research will advance and inform the development and verification of safety standards regarding use of this technology.</td>
</tr>
<tr>
<td>4/29/2020</td>
<td>14-CRDA-0298</td>
<td>Astronics AES</td>
<td>The purpose of this agreement is to develop solid-state power control and protective devices for aircraft, and to provide support for industry standards.</td>
</tr>
<tr>
<td>4/23/2020</td>
<td>14-CRDA-0299</td>
<td>Northrop Grumman Systems Corporation</td>
<td>The purpose of this agreement is to perform a variety of operational and technical assessments to meet specific objectives to support integration of Unmanned Aircraft Systems (UAS) into the National Airspace System, to support existing and future certification paths for UAS airframes and system components, and to assist in the Next Generation Air Transportation System (NextGen).</td>
</tr>
<tr>
<td>1/21/2020</td>
<td>20-CRADA-0378C (CAMI)</td>
<td>Rockwell Collins, Inc.</td>
<td>The purpose of this agreement is to conduct collaborative research using Rockwell Collin’s fixed-base flight deck simulator and head-worn display technology to collect human performance data during the use of a head-worn display.</td>
</tr>
<tr>
<td>11/14/19</td>
<td>15-CRDA-0310</td>
<td>Arconic (formerly ALCOA)</td>
<td>The purpose of this agreement is to obtain full-scale fuselage-panel test data to demonstrate whether and how fuselage concepts utilizing Emerging Metallic Structures Technologies improve the durability and damage tolerance compared to current baseline aluminum fuselage structures. The single-aisle aircraft fuselage will be used as the baseline structure. Test data will be collected utilizing the unique capabilities of the FAA’s Full-scale Aircraft Structural Test Evaluation and Research facility.</td>
</tr>
<tr>
<td>11/7/2019</td>
<td>13-CRDA-0289</td>
<td>The Boeing Company</td>
<td>The purpose of this agreement is to allow technical evaluation of the FAA’s NextGen concepts and to allow other mutually beneficial aviation research.</td>
</tr>
<tr>
<td>Period of Performance</td>
<td>CRADA Number</td>
<td>Partner</td>
<td>Subject/Purpose</td>
</tr>
<tr>
<td>-----------------------</td>
<td>--------------</td>
<td>---------</td>
<td>----------------</td>
</tr>
<tr>
<td>Start Date</td>
<td>End Date</td>
<td>CRADA</td>
<td>Industry (Active in FY 20)</td>
</tr>
<tr>
<td>10/29/2019</td>
<td>5/15/2025</td>
<td>14-CRDA-0304</td>
<td>Shell Global Solutions (U.S.), Inc.</td>
</tr>
<tr>
<td>10/13/2019</td>
<td>11/4/2022</td>
<td>14-CRDA-0296</td>
<td>Ametek Aerospace and Defense</td>
</tr>
<tr>
<td>09/25/2019</td>
<td>09/24/2021</td>
<td>19-CRDA-0373</td>
<td>Protean, LLC.</td>
</tr>
<tr>
<td>09/20/2019</td>
<td>10/31/2024</td>
<td>07-CRDA-0236</td>
<td>The Boeing Company</td>
</tr>
<tr>
<td>10/13/2019</td>
<td>11/4/2022</td>
<td>19-CRDA-0366</td>
<td>GE Aviation Systems LLC</td>
</tr>
<tr>
<td>09/25/2019</td>
<td>09/24/2021</td>
<td>19-CRDA-0371</td>
<td>Mistras Group, Inc.</td>
</tr>
<tr>
<td>09/20/2019</td>
<td>10/31/2024</td>
<td>07-CRDA-0236</td>
<td>The Boeing Company</td>
</tr>
<tr>
<td>09/25/2019</td>
<td>09/24/2021</td>
<td>19-CRDA-0371</td>
<td>Mistras Group, Inc.</td>
</tr>
<tr>
<td>09/25/2019</td>
<td>09/24/2021</td>
<td>19-CRDA-0371</td>
<td>Mistras Group, Inc.</td>
</tr>
<tr>
<td>09/25/2019</td>
<td>09/24/2021</td>
<td>19-CRDA-0371</td>
<td>Mistras Group, Inc.</td>
</tr>
<tr>
<td>Period of Performance</td>
<td>CRADA Number</td>
<td>Partner</td>
<td>Subject/Purpose</td>
</tr>
<tr>
<td>-----------------------</td>
<td>--------------</td>
<td>---------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Start Date</td>
<td>End Date</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/4/2019</td>
<td>3/4/2022</td>
<td>19-CRDA-0367</td>
<td>Rockwell Collins, A Collins Aerospace Company</td>
</tr>
<tr>
<td>12/21/2018</td>
<td>12/21/2021</td>
<td>19-CRDA-0361</td>
<td>Kerr Avionics</td>
</tr>
<tr>
<td>12/12/2018</td>
<td>12/13/2021</td>
<td>18-CRDA-0357</td>
<td>Simmonds Precision Products, Inc., A Collins Aerospace Company</td>
</tr>
<tr>
<td>9/10/2018</td>
<td>9/6/2021</td>
<td>16-CRDA-0336</td>
<td>Astronics Corporation, MaxViz</td>
</tr>
<tr>
<td>6/1/2018</td>
<td>10/19/2021</td>
<td>15-CRDA-0309</td>
<td>Burlington Northern Santa Fe Railway</td>
</tr>
<tr>
<td>5/15/2018</td>
<td>8/13/2026</td>
<td>16-CRDA-0338</td>
<td>Afton Chemical Corp.</td>
</tr>
<tr>
<td>Period of Performance</td>
<td>CRADA Number</td>
<td>Partner</td>
<td>Subject/Purpose</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------</td>
<td>------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Start Date</td>
<td>End Date</td>
<td>CRADA Number</td>
<td>Partner</td>
</tr>
<tr>
<td>4/24/2018</td>
<td>4/23/2021</td>
<td>18-CRDA-0352</td>
<td>Metis Design Corp</td>
</tr>
<tr>
<td>1/13/2017</td>
<td>1/13/2022</td>
<td>17-CRDA-0343</td>
<td>Rockwell Collins</td>
</tr>
<tr>
<td>10/28/2016</td>
<td>10/28/2020</td>
<td>16-CRDA-0339</td>
<td>Livermore Software Technology Corporation</td>
</tr>
<tr>
<td>9/29/2014</td>
<td>9/30/2024</td>
<td>18-CRDA-0295</td>
<td>FedEx</td>
</tr>
<tr>
<td>7/29/2011</td>
<td>7/29/2021</td>
<td>96-CRDA-0097</td>
<td>The Boeing Company</td>
</tr>
<tr>
<td>12/23/2010</td>
<td>12/23/2020</td>
<td>10-CRDA-0268</td>
<td>United Parcel Service Co.</td>
</tr>
</tbody>
</table>
## 1.2.1 Industry (International)

<table>
<thead>
<tr>
<th>Period of Performance</th>
<th>CRADA Number</th>
<th>Partner</th>
<th>Subject/Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Start Date</strong></td>
<td><strong>End Date</strong></td>
<td><strong>Number</strong></td>
<td><strong>Description</strong></td>
</tr>
<tr>
<td>2/5/2020</td>
<td>2/5/2025</td>
<td>20-CRDA-0375C (CAMI)</td>
<td>Adacel Systems, Inc.</td>
</tr>
<tr>
<td>3/7/2019</td>
<td>3/7/2022</td>
<td>19-CRDA-0358</td>
<td>CMC Electronics Inc.</td>
</tr>
<tr>
<td>7/2/2018</td>
<td>7/2/2021</td>
<td>12-CRDA-0285</td>
<td>Team Eagle Ltd</td>
</tr>
<tr>
<td>5/8/2018</td>
<td>5/7/2021</td>
<td>18-CRDA-0354</td>
<td>MIPsoft Oy (BlindSquare)</td>
</tr>
</tbody>
</table>
## 1.2.2 Industry (Small Business)

<table>
<thead>
<tr>
<th>Period of Performance</th>
<th>CRADA Number</th>
<th>Partner</th>
<th>Subject/Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Start Date</strong></td>
<td><strong>End Date</strong></td>
<td><strong>Number</strong></td>
<td><strong>(Small Business)</strong></td>
</tr>
<tr>
<td>2/3/20</td>
<td>2/3/23</td>
<td>20-CRDA-0372</td>
<td>ASA</td>
</tr>
<tr>
<td>12/20/2019</td>
<td>12/20/2021</td>
<td>20-CRADA-0379</td>
<td>Lectromechanical Design Company LLC.</td>
</tr>
<tr>
<td>3/11/2019</td>
<td>3/11/2022</td>
<td>19-CRDA-0368</td>
<td>Acellent Technologies Inc.</td>
</tr>
<tr>
<td>1/30/2019</td>
<td>1/26/2024</td>
<td>09-CRDA-0257</td>
<td>Diakon Solutions LLC</td>
</tr>
<tr>
<td>6/1/2018</td>
<td>6/16/2021</td>
<td>15-CRDA-0317</td>
<td>ATECH Inc.</td>
</tr>
<tr>
<td>4/5/2018</td>
<td>4/20/2023</td>
<td>16-CRDA-0326</td>
<td>GSSL, Inc. dba Near Space Corporation</td>
</tr>
</tbody>
</table>
2. Centers of Excellence Grants

The table below details the FAA’s active Centers of Excellence (COE) grants.

<table>
<thead>
<tr>
<th>Award Date</th>
<th>End Date</th>
<th>Grant Number</th>
<th>Grant Title</th>
<th>Recipient Institution</th>
<th>Award Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/11/2020</td>
<td>8/31/2021</td>
<td>13-C-AJFE-MIT</td>
<td>Aircraft Noise Exposure and Market Outcomes in the United States</td>
<td>Massachusetts Institute of Technology</td>
<td>$380,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>6/30/2021</td>
<td>13-C-AJFE-GIT</td>
<td>Reduction of nvPM emissions from aero-engine fuel injectors</td>
<td>Georgia Tech Research Corporation</td>
<td>$500,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>8/31/2021</td>
<td>13-C-AJFE-PSU</td>
<td>Measurements to Support Noise Certification for UAS/UAM Vehicles and Identify Noise Reduction</td>
<td>Pennsylvania State University</td>
<td>$500,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>7/31/2021</td>
<td>13-C-AJFE-GIT</td>
<td>Improved Open Rotor Noise Prediction Capabilities</td>
<td>Georgia Tech Research Corporation</td>
<td>$300,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>8/31/2021</td>
<td>13-C-AJFE-BU</td>
<td>Improved Engine Fan Broadband Noise Prediction Capabilities</td>
<td>Trustees of Boston University, BUMC</td>
<td>$300,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>2/4/2022</td>
<td>13-C-AJFE-MIT</td>
<td>Surface Analysis to Support AEDT APM Development</td>
<td>Massachusetts Institute of Technology</td>
<td>$200,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>2/4/2023</td>
<td>13-C-AJFE-PSU</td>
<td>Support of Supersonic Aircraft En Route Noise Efforts In ICAO CAEP</td>
<td>Pennsylvania State University</td>
<td>$220,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>2/5/2022</td>
<td>13-C-AJFE-PSU</td>
<td>Turbine Cooling Through Additive Manufacturing</td>
<td>Pennsylvania State University</td>
<td>$400,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>2/5/2022</td>
<td>13-C-AJFE-SU</td>
<td>Open-source Data Collection, Analysis And Mitigation of Aviation Environmental Impacts</td>
<td>Board of Trustees of Leland Stanford, Jr. University CS</td>
<td>$400,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>5/31/2022</td>
<td>13-C-AJFE-UD</td>
<td>Evaluation of High Thermal Stability Fuels</td>
<td>University of Dayton Research Institute</td>
<td>$100,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>7/31/2021</td>
<td>13-C-AJFE-GIT</td>
<td>Low Emissions Pre-Mixed Combustion Technology for Supersonic Civil Transport</td>
<td>Georgia Tech Research Corporation</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>2/4/2022</td>
<td>13-C-AJFE-GIT</td>
<td>Noise Generation and Propagation from Advanced Combustors</td>
<td>Georgia Tech Research Corporation</td>
<td>$1,500,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>2/4/2022</td>
<td>13-C-AJFE-MIT</td>
<td>Comparative Assessment of Electrification Strategies for Aviation</td>
<td>Massachusetts Institute of Technology</td>
<td>$300,000</td>
</tr>
<tr>
<td>Award Date</td>
<td>End Date</td>
<td>Grant Number</td>
<td>Grant Title</td>
<td>Recipient Institution</td>
<td>Award Amount</td>
</tr>
<tr>
<td>------------</td>
<td>----------</td>
<td>--------------</td>
<td>------------------------------------------------------------------------------</td>
<td>----------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>2/4/2022</td>
<td>13-C-AJFE-MIT</td>
<td>Combustion Concepts for Next-Generation Aircraft Engines</td>
<td>Massachusetts Institute of Technology</td>
<td>$300,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>2/4/2022</td>
<td>13-C-AJFE-MIT</td>
<td>Clean Sheet Supersonic Engine Design and Performance</td>
<td>Massachusetts Institute of Technology</td>
<td>$400,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>2/4/2022</td>
<td>13-C-AJFE-GIT</td>
<td>CLEEN II-Aircraft Technology Modeling and Assessment – Benefits Assessments Continuation with Additional</td>
<td>Georgia Tech Research Corporation</td>
<td>$250,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>2/4/2022</td>
<td>13-C-AJFE-UU</td>
<td>Alternative Fuels Test Database Library</td>
<td>Board of Trustees of the University of Illinois</td>
<td>$200,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>2/4/2022</td>
<td>13-C-AJFE-GIT</td>
<td>Alternative Jet Fuel Supply Chain Analysis</td>
<td>Massachusetts Institute of Technology</td>
<td>$500,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>5/31/2021</td>
<td>13-C-AJFE-MIT</td>
<td>Analysis to Support the Development of an Engine nvPM Emissions Standard</td>
<td>Massachusetts Institute of Technology</td>
<td>$200,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>8/31/2021</td>
<td>13-C-AJFE-MIT</td>
<td>Aircraft Noise Abatement Procedure Modeling and Validation</td>
<td>Massachusetts Institute of Technology</td>
<td>$370,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>2/4/2022</td>
<td>13-C-AJFE-GIT</td>
<td>Noise Power Distance Re-Evaluation</td>
<td>Georgia Tech Research Corporation</td>
<td>$200,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>2/4/2022</td>
<td>13-C-AJFE-MIT</td>
<td>Analytical Approach for Quantifying Noise from Advanced Operational</td>
<td>Massachusetts Institute of Technology</td>
<td>$250,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>2/4/2022</td>
<td>13-C-AJFE-PU</td>
<td>Aircraft Technology Modeling and Assessment</td>
<td>Purdue University</td>
<td>$225,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>2/4/2022</td>
<td>13-C-AJFE-GIT</td>
<td>Aircraft Technology Modeling and Assessment</td>
<td>Georgia Tech Research Corporation</td>
<td>$1,100,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>8/31/2021</td>
<td>13-C-AJFE-SU</td>
<td>Shock Tube and Flow Reactor Studies of the Kinetics of Jet Fuels Rapid IR Fuel Screening</td>
<td>Board of Trustees of Leland Stanford Jr University CS</td>
<td>$300,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>7/31/2021</td>
<td>15-C-UAS-UND</td>
<td>Cybersecurity and Safety Literature Review</td>
<td>University of North Dakota</td>
<td>$144,238</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>7/31/2021</td>
<td>15-C-UAS-NMSU</td>
<td>Cybersecurity and Safety Literature Review</td>
<td>The Regents of New Mexico State University -MSC PSL</td>
<td>$150,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>7/31/2021</td>
<td>15-C-UAS-ORSU</td>
<td>Cybersecurity and Safety Literature Review</td>
<td>Oregon State University</td>
<td>$200,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>3/31/2023</td>
<td>15-C-UAS-UNA</td>
<td>Safety Risks and Mitigations for UAS Operations on and around Airports</td>
<td>University of North Dakota</td>
<td>$320,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>3/31/2023</td>
<td>15-C-UAS-UAH</td>
<td>Safety Risks and Mitigations for UAS Operations on and around Airports</td>
<td>University of Alabama in Huntsville</td>
<td>$219,815</td>
</tr>
<tr>
<td>Award Date</td>
<td>End Date</td>
<td>Grant Number</td>
<td>Grant Title</td>
<td>Recipient Institution</td>
<td>Award Amount</td>
</tr>
<tr>
<td>------------</td>
<td>----------</td>
<td>--------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------------------------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>3/31/2023</td>
<td>15-C-UAS-NMSU</td>
<td>Safety Risks and Mitigations for UAS Operations on and around Airports</td>
<td>The Regents of New Mexico State University-MSC PSL</td>
<td>$320,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>3/31/2023</td>
<td>15-C-UAS-KSU</td>
<td>Safety Risks and Mitigations for UAS Operations on and around Airports</td>
<td>Kansas State University</td>
<td>$220,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>3/31/2023</td>
<td>15-C-UAS-KSU</td>
<td>Safety Risks and Mitigations for UAS Operations on and around Airports</td>
<td>University of Alaska-Fairbanks</td>
<td>$401,999</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>9/30/2022</td>
<td>15-C-UAS-MSU</td>
<td>Validation of ASTM Remote ID Standards - Safety Research Center</td>
<td>Mississippi State University</td>
<td>$750,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>9/30/2022</td>
<td>15-C-UAS-MSU</td>
<td>Validation of Low-Altitude Detect and Avoid Standards - Safety Research Center</td>
<td>Mississippi State University</td>
<td>$1,500,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>7/31/2022</td>
<td>15-C-UAS-WISU</td>
<td>Urban Air Mobility: Safety Standards, Aircraft Certification and Impact on Market Feasibility and Growth Potentials</td>
<td>Wichita State University</td>
<td>$450,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>10/31/2021</td>
<td>15-C-UAS-UND</td>
<td>UAS Standards Tracking, Mapping, and Analysis</td>
<td>University of North Dakota</td>
<td>$235,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>5/31/2022</td>
<td>15-C-UAS-UH</td>
<td>Science and Research Panel Support</td>
<td>University of Alabama in Huntsville</td>
<td>$70,383</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>3/30/2022</td>
<td>15-C-UAS-OSU</td>
<td>Identify Wake Turbulence and Flutter Testing Requirements for UAS</td>
<td>The Ohio State University</td>
<td>$698,921</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>3/31/2022</td>
<td>15-C-UAS-KU</td>
<td>Identify Wake Turbulence and Flutter Testing Requirements for UAS</td>
<td>University of Kansas</td>
<td>$800,000</td>
</tr>
<tr>
<td>8/11/2020</td>
<td>10/31/2021</td>
<td>15-C-UAS-ERAU</td>
<td>UAS Standards Tracking, Mapping, and Analysis</td>
<td>Embry-Riddle Aeronautical University</td>
<td>$264,900</td>
</tr>
<tr>
<td>7/29/2020</td>
<td>9/30/2021</td>
<td>12-C-GA-OSU</td>
<td>Management and Administration</td>
<td>The Ohio State University</td>
<td>$5,000</td>
</tr>
<tr>
<td>7/29/2020</td>
<td>7/31/2021</td>
<td>12-C-GA-ISU</td>
<td>Heated Airport Pavement</td>
<td>Iowa State University of Science and Technology</td>
<td>$150,000</td>
</tr>
<tr>
<td>7/29/2020</td>
<td>7/31/2021</td>
<td>12-C-GA-GIT</td>
<td>Rotorcraft ASIAS</td>
<td>Georgia Tech Research Corporation</td>
<td>$167,500</td>
</tr>
<tr>
<td>7/29/2020</td>
<td>9/30/2021</td>
<td>12-C-GA-TEES</td>
<td>Management and Administration</td>
<td>Texas A&amp;M Engineering Experiment Station</td>
<td>$5,000</td>
</tr>
<tr>
<td>7/29/2020</td>
<td>9/30/2021</td>
<td>12-C-GA-PU</td>
<td>Management and Administration</td>
<td>Purdue University</td>
<td>$135,000</td>
</tr>
<tr>
<td>Award Date</td>
<td>End Date</td>
<td>Grant Number</td>
<td>Grant Title</td>
<td>Recipient Institution</td>
<td>Award Amount</td>
</tr>
<tr>
<td>------------</td>
<td>----------</td>
<td>--------------</td>
<td>-------------</td>
<td>-----------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>7/29/2020</td>
<td>9/30/2021</td>
<td>12-C-GA-ISU</td>
<td>Management and Administration</td>
<td>Iowa State University of Science and Technology</td>
<td>$5,000</td>
</tr>
<tr>
<td>7/29/2020</td>
<td>9/30/2020</td>
<td>12-C-GA-GIT</td>
<td>Management and Administration</td>
<td>Georgia Tech Research Corporation</td>
<td>$5,000</td>
</tr>
<tr>
<td>7/29/2020</td>
<td>9/30/2021</td>
<td>12-C-GA-FIT</td>
<td>Management and Administration</td>
<td>Florida Institute of Technology</td>
<td>$5,000</td>
</tr>
<tr>
<td>7/29/2020</td>
<td>9/30/2021</td>
<td>12-C-GA-PU</td>
<td>Safety Analysis for General Aviation - Loss of Control</td>
<td>Purdue University</td>
<td>$185,000</td>
</tr>
<tr>
<td>7/20/2020</td>
<td>9/30/2021</td>
<td>16-C-TTHP-QK</td>
<td>Improvements of Flight Inspection Antenna Modeling and Simulation</td>
<td>The University of Oklahoma</td>
<td>$100,000</td>
</tr>
<tr>
<td>7/20/2020</td>
<td>9/30/2020</td>
<td>12-C-GA-GIT</td>
<td>Management and Administration</td>
<td>Georgia Tech Research Corporation</td>
<td>$5,000</td>
</tr>
<tr>
<td>7/20/2020</td>
<td>9/30/2020</td>
<td>12-C-GA-FIT</td>
<td>Management and Administration</td>
<td>Florida Institute of Technology</td>
<td>$5,000</td>
</tr>
<tr>
<td>7/20/2020</td>
<td>9/30/2021</td>
<td>16-C-TTHP-WISU</td>
<td>Improvements of Flight Inspection Antenna Modeling and Simulation</td>
<td>Wichita State University</td>
<td>$10,000</td>
</tr>
<tr>
<td>7/20/2020</td>
<td>8/10/2021</td>
<td>16-C-TTHP-WISU</td>
<td>Wichita State University (WISU) Administrative Program Management</td>
<td>Wichita State University</td>
<td>$155,837</td>
</tr>
<tr>
<td>7/20/2020</td>
<td>11/30/2020</td>
<td>16-C-TTHP-WISU</td>
<td>UAS Combat Flight Inspection Project Plan</td>
<td>Wichita State University</td>
<td>$3,000</td>
</tr>
<tr>
<td>7/20/2020</td>
<td>11/30/2020</td>
<td>16-C-TTHP-OKSU</td>
<td>UAS Combat Flight Inspection Project Plan</td>
<td>Oklahoma State University</td>
<td>$29,872</td>
</tr>
<tr>
<td>7/15/2020</td>
<td>5/31/2022</td>
<td>15-C-UAS-ORSU</td>
<td>Disaster Preparedness and Response</td>
<td>Oregon State University</td>
<td>$165,000</td>
</tr>
<tr>
<td>7/15/2020</td>
<td>5/31/2022</td>
<td>15-C-UAS-NCSU</td>
<td>Disaster Preparedness and Response</td>
<td>North Carolina State University</td>
<td>$124,979</td>
</tr>
<tr>
<td>7/15/2020</td>
<td>5/31/2022</td>
<td>15-C-UAS-MSU</td>
<td>Disaster Preparedness and Response</td>
<td>Mississippi State University</td>
<td>$130,000</td>
</tr>
<tr>
<td>7/15/2020</td>
<td>5/31/2022</td>
<td>15-C-UAS-UAF</td>
<td>Disaster Preparedness and Response</td>
<td>University of Alaska-Fairbanks</td>
<td>$245,000</td>
</tr>
<tr>
<td>7/15/2020</td>
<td>5/31/2022</td>
<td>15-C-UAS-NMSU</td>
<td>Disaster Preparedness and Response</td>
<td>The Regents of New Mexico State University MSC PSL</td>
<td>$234,000</td>
</tr>
<tr>
<td>7/15/2020</td>
<td>5/31/2022</td>
<td>15-C-UAS-UAH</td>
<td>Disaster Preparedness and Response</td>
<td>University of Alabama in Huntsville</td>
<td>$1,101,000</td>
</tr>
<tr>
<td>7/15/2020</td>
<td>5/7/2021</td>
<td>15-C-UAS-MSU</td>
<td>COE UAS Program Management</td>
<td>Mississippi State University</td>
<td>$1,290,410</td>
</tr>
<tr>
<td>6/12/2020</td>
<td>8/31/2021</td>
<td>13-C-AM-UW</td>
<td>Administration of the FAA Center on Advanced Materials in Transport Aircraft Structures</td>
<td>University of Washington</td>
<td>$83,439</td>
</tr>
<tr>
<td>6/12/2020</td>
<td>8/31/2022</td>
<td>13-C-AM-WISU</td>
<td>Development and Safety Management of Composite Certification Guidance</td>
<td>Wichita State University</td>
<td>$180,000</td>
</tr>
<tr>
<td>6/12/2020</td>
<td>8/31/2022</td>
<td>13-C-AM-WISU</td>
<td>Inspection and Teardown of Aged In-Service Composite Structures</td>
<td>Wichita State University</td>
<td>$500,000</td>
</tr>
<tr>
<td>6/12/2020</td>
<td>9/30/2022</td>
<td>13-C-AM-WISU</td>
<td>Ceramic Matrix Composite Materials Guidelines for Aircraft Design and Certification</td>
<td>Wichita State University</td>
<td>$500,000</td>
</tr>
<tr>
<td>6/12/2020</td>
<td>9/30/2022</td>
<td>13-C-AM-WISU</td>
<td>Resin-Infused Fiber Reinforced Materials Guidelines for Aircraft Design and Certification</td>
<td>Wichita State University</td>
<td>$600,000</td>
</tr>
<tr>
<td>Award Date</td>
<td>End Date</td>
<td>Grant Number</td>
<td>Grant Title</td>
<td>Recipient Institution</td>
<td>Award Amount</td>
</tr>
<tr>
<td>------------</td>
<td>----------</td>
<td>--------------</td>
<td>------------------------------------------------------------------------------</td>
<td>-------------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>6/12/2020</td>
<td>9/30/2021</td>
<td>13-C-AM-WISU</td>
<td>Correlation between Effects of Defects on Static and Dynamic Strength Behavior of Composite Materials - Phase II</td>
<td>Wichita State University</td>
<td>$150,000</td>
</tr>
<tr>
<td>6/12/2020</td>
<td>9/1/2022</td>
<td>13-C-AM-WISU</td>
<td>Composites Materials Handbook (CMH-17)</td>
<td>Wichita State University</td>
<td>$125,000</td>
</tr>
<tr>
<td>6/12/2020</td>
<td>9/1/2022</td>
<td>13-C-AM-WISU</td>
<td>Administration of the Center of Excellence for Composites and Advanced Materials</td>
<td>Wichita State University</td>
<td>$75,000</td>
</tr>
<tr>
<td>6/12/2020</td>
<td>5/31/2022</td>
<td>12-C-AM-AU</td>
<td>Factors Affecting Qualification/Certification: Evaluating the Criticality of Inherent Anomalies/Defects on the Fatigue Behavior of AM Metallic Parts</td>
<td>Auburn University</td>
<td>$1,199,990</td>
</tr>
<tr>
<td>6/12/2020</td>
<td>8/31/2021</td>
<td>13-C-AM-UW</td>
<td>Nanomechanical Characterization of Adhesive Bondlines</td>
<td>University of Washington</td>
<td>$150,000</td>
</tr>
<tr>
<td>6/12/2020</td>
<td>9/30/2021</td>
<td>13-C-AM-UCSD</td>
<td>Impact Damage Tolerance Guidelines for Stiffened Composite Panels</td>
<td>The Regents of the University of California U C San Diego</td>
<td>$396,698</td>
</tr>
<tr>
<td>6/5/2020</td>
<td>11/30/2020</td>
<td>13-C-AJFE-GIT</td>
<td>Predictive Simulation of mvPM Emissions in Aircraft Combustors</td>
<td>Georgia Tech Research Corporation</td>
<td>$500,000</td>
</tr>
<tr>
<td>6/5/2020</td>
<td>3/31/2021</td>
<td>13-C-AJFE-SU</td>
<td>Physics-Based Analyses and Modeling for Supersonic Propulsion Exhaust Noise</td>
<td>Board of Trustees of Leland Stanford Jr University CS</td>
<td>$200,000</td>
</tr>
<tr>
<td>6/5/2020</td>
<td>4/29/2021</td>
<td>13-C-AJFE-Ul</td>
<td>Modeling Supersonic Jet Noise Reduction with Global Resolvent Modes</td>
<td>Board of Trustees of the University of Illinois</td>
<td>$199,956</td>
</tr>
<tr>
<td>6/5/2020</td>
<td>12/29/2020</td>
<td>13-C-AJFE-UH</td>
<td>Alternative Jet Fuel Supply Chain Analysis Tropical Region Analysis</td>
<td>University of Hawaii</td>
<td>$200,000</td>
</tr>
<tr>
<td>6/5/2020</td>
<td>12/31/2020</td>
<td>13-C-AJFE-PSU</td>
<td>Noise Model Validation for AEDT</td>
<td>Pennsylvania State University</td>
<td>$115,000</td>
</tr>
<tr>
<td>6/5/2020</td>
<td>3/30/2021</td>
<td>13-C-AJFE-GIT</td>
<td>Modeling and Measurements of Supersonic Civil Transport Jet Noise</td>
<td>Georgia Tech Research Corporation</td>
<td>$250,000</td>
</tr>
<tr>
<td>6/5/2020</td>
<td>6/30/2021</td>
<td>13-C-AJFE-GIT</td>
<td>Alternative Design Configurations to meet Future Demand</td>
<td>Georgia Tech Research Corporation</td>
<td>$250,000</td>
</tr>
<tr>
<td>6/5/2020</td>
<td>6/30/2021</td>
<td>13-C-AJFE-GIT</td>
<td>Parametric Noise Modeling for Boundary Layer Ingesting Propulsors</td>
<td>Georgia Tech Research Corporation</td>
<td>$300,000</td>
</tr>
<tr>
<td>6/5/2020</td>
<td>6/30/2021</td>
<td>13-C-AJFE-GIT</td>
<td>Noise Model Validation for AEDT</td>
<td>Georgia Tech Research Corporation</td>
<td>$235,000</td>
</tr>
<tr>
<td>Award Date</td>
<td>End Date</td>
<td>Grant Number</td>
<td>Grant Title</td>
<td>Recipient Institution</td>
<td>Award Amount</td>
</tr>
<tr>
<td>------------</td>
<td>----------</td>
<td>--------------</td>
<td>------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>6/5/2020</td>
<td>7/31/2021</td>
<td>13-C-AJFE-GIT</td>
<td>Noise Certification Streamlining</td>
<td>Georgia Tech Research Corporation</td>
<td>$250,000</td>
</tr>
<tr>
<td>6/5/2020</td>
<td>6/30/2021</td>
<td>13-C-AJFE-GIT</td>
<td>Analytical Methods for Expanding the AEDT Aircraft Fleet Database</td>
<td>Georgia Tech Research Corporation</td>
<td>$150,000</td>
</tr>
<tr>
<td>6/5/2020</td>
<td>5/31/2021</td>
<td>13-C-AJFE-PSU</td>
<td>Jet noise modeling to support low noise supersonic aircraft technology development</td>
<td>Pennsylvania State University</td>
<td>$100,000</td>
</tr>
<tr>
<td>6/5/2020</td>
<td>11/30/2020</td>
<td>13-C-AJFE-PU</td>
<td>Impact of Fuel Heating on Combustion and Emissions</td>
<td>Purdue University</td>
<td>$250,000</td>
</tr>
<tr>
<td>6/5/2020</td>
<td>11/30/2020</td>
<td>13-C-AJFE-UI</td>
<td>Fuel Testing Approaches for Rapid Jet Fuel Prescreening</td>
<td>Board of Trustees of the University of Illinois</td>
<td>$150,000</td>
</tr>
<tr>
<td>6/5/2020</td>
<td>9/30/2020</td>
<td>13-C-AJFE-PSU</td>
<td>Combustor Wall Cooling with Dirt Mitigation</td>
<td>Pennsylvania State University</td>
<td>$150,000</td>
</tr>
<tr>
<td>6/5/2020</td>
<td>9/30/2020</td>
<td>13-C-AJFE-MST</td>
<td>Transitioning a research mvPM mass calibration procedure to operations</td>
<td>Missouri University of Science and Technology</td>
<td>$846,707</td>
</tr>
<tr>
<td>6/5/2020</td>
<td>6/30/2022</td>
<td>13-C-AJFE-GIT</td>
<td>Geospatially Driven Noise Estimation Module</td>
<td>Georgia Tech Research Corporation</td>
<td>$250,000</td>
</tr>
<tr>
<td>2/18/2020</td>
<td>8/31/2021</td>
<td>12-C-AM-WISU</td>
<td>Core Materials Qualification Guidance for Aircraft Design and Certification</td>
<td>Wichita State University</td>
<td>$500,000</td>
</tr>
<tr>
<td>2/18/2020</td>
<td>9/30/2022</td>
<td>12-C-AM-WISU</td>
<td>Evaluation of Aged Structural Bonds on Rotor Blades</td>
<td>Wichita State University</td>
<td>$350,000</td>
</tr>
<tr>
<td>2/18/2020</td>
<td>9/30/2020</td>
<td>12-C-AM-WISU</td>
<td>FAA Research Requirement on Lightning Strike of Composites Structure</td>
<td>Wichita State University</td>
<td>$125,000</td>
</tr>
<tr>
<td>2/18/2020</td>
<td>8/31/2021</td>
<td>12-C-AM-UU</td>
<td>Development and Evaluation of Fracture Mechanics Test Methods for Sandwich Composites</td>
<td>The University of Utah</td>
<td>$100,000</td>
</tr>
<tr>
<td>2/18/2020</td>
<td>8/31/2021</td>
<td>12-C-AM-WISU</td>
<td>Development and Safety Management of Composite Certification Guidance</td>
<td>Wichita State University</td>
<td>$180,000</td>
</tr>
<tr>
<td>2/18/2020</td>
<td>8/31/2021</td>
<td>12-C-AM-WISU</td>
<td>Composites Materials Handbook (CMH-17)</td>
<td>Wichita State University</td>
<td>$125,000</td>
</tr>
<tr>
<td>2/18/2020</td>
<td>12/15/2020</td>
<td>12-C-AM-WISU</td>
<td>Durability of Bonded Aerospace Structure</td>
<td>Washington State University</td>
<td>$75,000</td>
</tr>
<tr>
<td>2/18/2020</td>
<td>8/31/2022</td>
<td>12-C-AM-UW</td>
<td>Safety of Certification of Discontinuous Fiber Composite Structures</td>
<td>University of Washington</td>
<td>$698,539</td>
</tr>
<tr>
<td>2/18/2020</td>
<td>8/31/2021</td>
<td>12-C-AM-WISU</td>
<td>Administration of the Center of Excellence for Composites and Advanced Materials</td>
<td>Wichita State University</td>
<td>$75,000</td>
</tr>
<tr>
<td>2/18/2020</td>
<td>8/31/2021</td>
<td>12-C-AM-WISU</td>
<td>Adhesive Bond Qualification Guidance for Aircraft Design Certification</td>
<td>Wichita State University</td>
<td>$900,000</td>
</tr>
<tr>
<td>2/18/2020</td>
<td>8/31/2021</td>
<td>12-C-AM-WISU</td>
<td>Investigation of Static Strength Variability Between Composites and Metallic with respect to Overload Factors</td>
<td>Wichita State University</td>
<td>$100,000</td>
</tr>
<tr>
<td>2/18/2020</td>
<td>8/31/2021</td>
<td>12-C-AM-WISU</td>
<td>Development of a Higher Level Building Block Testing Standards</td>
<td>Wichita State University</td>
<td>$875,000</td>
</tr>
<tr>
<td>Award Date</td>
<td>End Date</td>
<td>Grant Number</td>
<td>Grant Title</td>
<td>Recipient Institution</td>
<td>Award Amount</td>
</tr>
<tr>
<td>------------</td>
<td>----------</td>
<td>--------------</td>
<td>------------------------------------------------------------------------------</td>
<td>----------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>2/18/2020</td>
<td>8/31/2021</td>
<td>12-C-AM-WISU</td>
<td>Composite Materials Handbook (CMH-17) for Additive Manufacturing</td>
<td>Wichita State University</td>
<td>$200,000</td>
</tr>
<tr>
<td>2/18/2020</td>
<td>8/31/2021</td>
<td>12-C-AM-WISU</td>
<td>Polymer-Based Additive Manufacturing Guidelines for Aircraft Design and Certification</td>
<td>Wichita State University</td>
<td>$2,800,000</td>
</tr>
<tr>
<td>2/18/2020</td>
<td>8/31/2021</td>
<td>12-C-AM-WISU</td>
<td>Thermoplastic Welding Process Qualification Protocols for Aircraft Design and Certification</td>
<td>Wichita State University</td>
<td>$350,000</td>
</tr>
<tr>
<td>2/18/2020</td>
<td>8/31/2021</td>
<td>12-C-AM-WISU</td>
<td>Ceramic Matrix Composite Materials Guidelines for Aircraft Design and Certification</td>
<td>Wichita State University</td>
<td>$350,000</td>
</tr>
<tr>
<td>2/18/2020</td>
<td>8/31/2021</td>
<td>12-C-AM-WISU</td>
<td>Advanced Fiber Reinforced Polymer Composite Materials Guidance for Aircraft Design Certification Process and Process Control</td>
<td>Wichita State University</td>
<td>$475,000</td>
</tr>
<tr>
<td>2/18/2020</td>
<td>8/31/2021</td>
<td>12-C-AM-WISU</td>
<td>Development of Guidance for Technical Standard Order for Composite Materials</td>
<td>Wichita State University</td>
<td>$150,000</td>
</tr>
<tr>
<td>2/18/2020</td>
<td>8/31/2021</td>
<td>12-C-AM-WISU</td>
<td>Correlation Between Effects of Defects on Static and Dynamic Strength Behavior of Composite Materials</td>
<td>Wichita State University</td>
<td>$299,972</td>
</tr>
<tr>
<td>2/18/2020</td>
<td>12/30/2020</td>
<td>12-C-AM-WISU</td>
<td>FAA CSET, CMT, CMfgT and Adhesive Online Courses – Mod and Implementation Phase II</td>
<td>Wichita State University</td>
<td>$100,000</td>
</tr>
<tr>
<td>2/12/2020</td>
<td>1/31/2020</td>
<td>12-C-AM-WISU</td>
<td>Inspection and Teardown of Aged In-Service Bonded Repairs</td>
<td>Wichita State University</td>
<td>$250,000</td>
</tr>
<tr>
<td>2/12/2020</td>
<td>6/30/2022</td>
<td>15-C-UAS-MSU</td>
<td>UAS Safety Case Development, Process Improvement, and Data Collection</td>
<td>Mississippi State University</td>
<td>$150,000</td>
</tr>
<tr>
<td>2/12/2020</td>
<td>6/30/2022</td>
<td>15-C-UAS-UND</td>
<td>UAS Safety Case Development, Process Improvement, and Data Collection</td>
<td>University of North Dakota</td>
<td>$545,000</td>
</tr>
<tr>
<td>2/12/2020</td>
<td>9/30/2021</td>
<td>15-C-UAS-ORSU</td>
<td>Establish pilot proficiency requirements</td>
<td>Oregon State University</td>
<td>$248,000</td>
</tr>
<tr>
<td>2/12/2020</td>
<td>9/30/2021</td>
<td>15-C-UAS-DU</td>
<td>Establish Pilot Proficiency Requirements</td>
<td>Drexel University</td>
<td>$192,000</td>
</tr>
<tr>
<td>2/12/2020</td>
<td>9/30/2019</td>
<td>15-C-UAS-KSU</td>
<td>Establish Pilot Proficiency Requirements</td>
<td>Kansas State University</td>
<td>$60,000</td>
</tr>
<tr>
<td>2/12/2020</td>
<td>11/30/2021</td>
<td>15-C-UAS-UND</td>
<td>Develop Risk-Based Training and Standards for Operational Approval and Issuance</td>
<td>University of North Dakota</td>
<td>$150,000</td>
</tr>
<tr>
<td>2/12/2020</td>
<td>11/30/2019</td>
<td>15-C-UAS-UAF</td>
<td>Develop Risk-Based Training and Standards for Operational Approval and Issuance</td>
<td>University of Alaska-Fairbanks</td>
<td>$150,000</td>
</tr>
<tr>
<td>2/12/2020</td>
<td>11/30/2021</td>
<td>15-C-UAS-KSU</td>
<td>Develop Risk-Based Training and Standards for Operational Approval and Issuance</td>
<td>Kansas State University</td>
<td>$198,161</td>
</tr>
<tr>
<td>2/12/2020</td>
<td>12/31/2020</td>
<td>15-C-UAS-UND</td>
<td>UAS Flight Data Collection and Analysis Phase II</td>
<td>University of North Dakota</td>
<td>$74,953</td>
</tr>
<tr>
<td>Award Date</td>
<td>End Date</td>
<td>Grant Number</td>
<td>Grant Title</td>
<td>Recipient Institution</td>
<td>Award Amount</td>
</tr>
<tr>
<td>------------</td>
<td>----------</td>
<td>--------------</td>
<td>-------------</td>
<td>-----------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>2/12/2020</td>
<td>12/31/2020</td>
<td>15-C-UAS-UAF</td>
<td>UAS Flight Data Collection and Analysis Phase II</td>
<td>University of Alaska-Fairbanks</td>
<td>$25,000</td>
</tr>
<tr>
<td>2/12/2020</td>
<td>6/30/2022</td>
<td>15-C-UAS-OSU</td>
<td>UAS Safety Case Development, Process Improvement, and Data Collection</td>
<td>The Ohio State University</td>
<td>$174,958</td>
</tr>
<tr>
<td>2/12/2020</td>
<td>6/30/2022</td>
<td>15-C-UAS-KSU</td>
<td>UAS Safety Case Development, Process Improvement, and Data Collection</td>
<td>Kansas State University</td>
<td>$200,000</td>
</tr>
<tr>
<td>2/12/2020</td>
<td>6/30/2022</td>
<td>15-C-UAS-UAF</td>
<td>UAS Safety Case Development, Process Improvement, and Data Collection</td>
<td>University of Alaska-Fairbanks</td>
<td>$260,000</td>
</tr>
<tr>
<td>2/12/2020</td>
<td>6/30/2022</td>
<td>15-C-UAS-NMSU</td>
<td>UAS Safety Case Development, Process Improvement, and Data Collection</td>
<td>The Regents of New Mexico State University MSC PSL</td>
<td>$149,999</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>9/30/2020</td>
<td>13-C-AJFE-SU</td>
<td>Validation of low exposure noise modeling by open source data management and visualization systems integrated with AEDT</td>
<td>Board of Trustees of Leland Stanford Jr University CS</td>
<td>$169,903</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>8/31/2022</td>
<td>13-C-AJFE-BU</td>
<td>Community Measurement of Aviation Emission Contribution of Ambient Air Quality</td>
<td>Trustees of Boston University, BUMC</td>
<td>$1,299,991</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>8/31/2021</td>
<td>13-C-AJFE-MIT</td>
<td>Improving Policy Analysis Tools to Evaluate Higher-Altitude Aircraft Operations</td>
<td>Massachusetts Institute of Technology</td>
<td>$500,000</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>8/31/2020</td>
<td>13-C-AJFE-MIT</td>
<td>Comparative Assessment of Electrification Strategies for Aviation</td>
<td>Massachusetts Institute of Technology</td>
<td>$300,000</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>8/31/2020</td>
<td>13-C-AJFE-MIT</td>
<td>Combustion Concepts For Next-Generation Aircraft Engines</td>
<td>Massachusetts Institute of Technology</td>
<td>$300,000</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>9/14/2020</td>
<td>13-C-AJFE-UTENN</td>
<td>Techno-Market Analysis of U.S. Bio refinery Supply Chains from Feedstock to Alternative Jet Fuels</td>
<td>University of Tennessee</td>
<td>$250,000</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>3/31/2021</td>
<td>13-C-AJFE-MIT</td>
<td>Clean Sheet Supersonic Engine Design and Performance</td>
<td>Massachusetts Institute of Technology</td>
<td>$400,000</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>9/30/2020</td>
<td>13-C-AJFE-PSU</td>
<td>Turbine Cooling Through Additive Manufacturing</td>
<td>Pennsylvania State University</td>
<td>$400,000</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>3/31/2021</td>
<td>13-C-AJFE-MIT</td>
<td>Analytical Approach for Quantifying Noise from Advanced Operational Procedures</td>
<td>Massachusetts Institute of Technology</td>
<td>$250,000</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>8/31/2020</td>
<td>13-C-AJFE-MIT</td>
<td>Alternative Jet Fuels Supply Chain Analysis</td>
<td>Massachusetts Institute of Technology</td>
<td>$400,000</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>8/31/2020</td>
<td>13-C-AJFE-PU</td>
<td>Techno-economic and Lifecycle Analysis of Alternative Aviation Biofuels Supply Chains - 1</td>
<td>Purdue University</td>
<td>$523,000</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>9/30/2020</td>
<td>13-C-AJFE-WaSU</td>
<td>Alternative Jet Fuel Supply Chain Analysis</td>
<td>Washington State University</td>
<td>$525,001</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>9/30/2020</td>
<td>13-C-AJFE-GIT</td>
<td>Noise Generation and Propagation from Advanced Combustors</td>
<td>Georgia Tech Research Corporation</td>
<td>$1,499,984</td>
</tr>
<tr>
<td>Award Date</td>
<td>End Date</td>
<td>Grant Number</td>
<td>Grant Title</td>
<td>Recipient Institution</td>
<td>Award Amount</td>
</tr>
<tr>
<td>------------</td>
<td>----------</td>
<td>--------------</td>
<td>-------------</td>
<td>-----------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>8/31/2020</td>
<td>13-C-AJFE-MIT</td>
<td>Surface Analysis to Support AEDT APM Development</td>
<td>Massachusetts Institute of Technology</td>
<td>$200,000</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>9/30/2021</td>
<td>13-C-CAJFE-PSU</td>
<td>Support for Supersonic Aircraft En Route Noise Efforts in ICAO CAEP</td>
<td>Pennsylvania State University</td>
<td>$200,000</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>8/31/2020</td>
<td>13-C-AJFE-GIT</td>
<td>Noise Power Distance Re-Evaluation</td>
<td>Georgia Tech Research Corporation</td>
<td>$200,000</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>8/31/2020</td>
<td>13-C-AJFE-GIT</td>
<td>AEDT Evaluation and Development Support</td>
<td>Georgia Tech Research Corporation</td>
<td>$700,000</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>8/31/2021</td>
<td>13-C-AJFE-GIT</td>
<td>CLEEN II-Aircraft Technology Modeling and Assessment</td>
<td>Georgia Tech Research Corporation</td>
<td>$240,000</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>9/30/2020</td>
<td>13-C-AJFE-WaSU</td>
<td>Administer Program Office for Center of Excellence for Alternative Jet Fuels and Environment</td>
<td>Washington State University</td>
<td>$399,713</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>8/31/2020</td>
<td>13-C-AJFE-UI</td>
<td>Alternative Fuels Test Database Library</td>
<td>Board of Trustees of the University of Illinois</td>
<td>$130,000</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>8/31/2020</td>
<td>13-C-AJFE-GIT</td>
<td>Aircraft Technology Modeling and Assessment</td>
<td>Georgia Tech Research Corporation</td>
<td>$1,200,000</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>8/31/2021</td>
<td>13-C-AJFE-GIT</td>
<td>Over-Wing Engine Placement Evaluation</td>
<td>Georgia Tech Research Corporation</td>
<td>$550,000</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>8/31/2020</td>
<td>13-C-AJFE-PU</td>
<td>Aircraft Technology Modeling and Assessment</td>
<td>Purdue University</td>
<td>$222,116</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>8/31/2020</td>
<td>13-C-AJFE-PSU</td>
<td>Rotorcraft Noise Abatement Procedures Development</td>
<td>Pennsylvania State University</td>
<td>$150,000</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>8/31/2020</td>
<td>13-C-AJFE-PSU</td>
<td>Urban Air Mobility Noise Reduction Modeling</td>
<td>Pennsylvania State University</td>
<td>$280,000</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>8/31/2019</td>
<td>13-C-AJFE-UD</td>
<td>Alternative Jet Fuels Test and Evaluation</td>
<td>University of Dayton Research Institute</td>
<td>$1,926,434</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>9/30/2020</td>
<td>13-C-AJFE-UI</td>
<td>Evaluation of FAA Climate Tools</td>
<td>Board of Trustees of the University of Illinois</td>
<td>$200,000</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>8/17/2020</td>
<td>15-C-CST-FSU</td>
<td>High Temp Pressure Sensor</td>
<td>Florida State University</td>
<td>$203,313</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>8/17/2020</td>
<td>15-C-CST-FSU</td>
<td>Optical Measurements of Rocket Nozzle Thrust and Noise</td>
<td>Florida State University</td>
<td>$198,984</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>7/31/2019</td>
<td>15-C-CST-UCF</td>
<td>Ultra High Temperature Composites Thermal Protection Systems</td>
<td>University of Central Florida</td>
<td>$47,909</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>2/17/2022</td>
<td>15-C-CST-UCF</td>
<td>FAA COE CST Executive Director and Administration</td>
<td>University of Colorado Boulder</td>
<td>$716,667</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>8/31/2020</td>
<td>15-C-CST-NMSU</td>
<td>Space Object Database</td>
<td>The Regents New Mexico State University</td>
<td>$204,533</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>8/16/2020</td>
<td>15-C-CST-FIT</td>
<td>Measurements of Thunderstorm Electrical Parameters For Improvement of the Lightning Flight Comit Criteria</td>
<td>Florida Institute of Technology</td>
<td>$163,822</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>2/17/2022</td>
<td>15-C-CST-NMT</td>
<td>OMIS Integration and COE Program Support</td>
<td>New Mexico Institute of Mining and Technology</td>
<td>$150,000</td>
</tr>
<tr>
<td>Award Date</td>
<td>End Date</td>
<td>Grant Number</td>
<td>Grant Title</td>
<td>Recipient Institution</td>
<td>Award Amount</td>
</tr>
<tr>
<td>------------</td>
<td>------------</td>
<td>--------------</td>
<td>------------------------------------------------------------------------------</td>
<td>-------------------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>5/1/2021</td>
<td>15-C-CST-NMT</td>
<td>Structural Health Monitoring Framework</td>
<td>New Mexico Institute of Mining and Technology</td>
<td>$200,000</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>8/31/2020</td>
<td>15-C-CST-UC</td>
<td>CubeSat Cluster Deployment Tracking</td>
<td>University of Colorado Boulder</td>
<td>$173,653</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>8/31/2020</td>
<td>15-C-CST-UC</td>
<td>Resident Space Object System Mechanics</td>
<td>University of Colorado Boulder</td>
<td>$89,185</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>12/12/2020</td>
<td>15-C-CST-FIT</td>
<td>Human Input Systems for Commercial Space Transportation</td>
<td>Florida Institute of Technology</td>
<td>$160,000</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>8/19/2020</td>
<td>15-C-CST-UCF</td>
<td>Novel Techniques for Efficient Uncertainty Quantification, Probability of Collision, and Benchmarking in Space</td>
<td>University of Central Florida</td>
<td>$87,414</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>8/17/2020</td>
<td>15-C-CST-UTMB</td>
<td>Development of Commercial Space Occupational Medicine Health Standards</td>
<td>University of Texas Medical Branch at Galveston</td>
<td>$191,803</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>12/31/2020</td>
<td>15-C-CST-FIT</td>
<td>Streamlined Export Control for Commercial Space Transportation</td>
<td>Florida Institute of Technology</td>
<td>$160,000</td>
</tr>
<tr>
<td>2/5/2020</td>
<td>1/30/2021</td>
<td>15-C-CST-UCF</td>
<td>LED-based Low Cost Gas Sensor for Crew and Vehicle Safety</td>
<td>University of Central Florida</td>
<td>$178,800</td>
</tr>
</tbody>
</table>
### 3. Aviation Research Grants

The table below details the FAA’s active aviation research grants.

<table>
<thead>
<tr>
<th>Award Date</th>
<th>End Date</th>
<th>Grant Award No.</th>
<th>Subject/Purpose</th>
<th>Institution</th>
<th>Total Obligations</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/1/2020</td>
<td>3/30/2023</td>
<td>692M15-20-4-0002</td>
<td>Human Factors research to understand current visual scanning techniques (training, application) in 14 CFR Part 25 aircraft (transport category) to provide FAA with a data-driven foundation for identifying the acceptability of design assumptions and mitigations proposed for new flight deck layout/designs.</td>
<td>University of Michigan</td>
<td>$376,000</td>
</tr>
<tr>
<td>9/1/2020</td>
<td>8/31/2022</td>
<td>692M15-20-4-0003</td>
<td>To study composite bonded repairs and advanced metallic materials for aircraft structures, on site at the FAA William J. Hughes Technical Center.</td>
<td>Drexel University</td>
<td>$350,000</td>
</tr>
<tr>
<td>9/1/2020</td>
<td>2/28/2023</td>
<td>692M15-20-4-0004</td>
<td>Weather Technology in the Cockpit.</td>
<td>Embry-Riddle Aeronautical University</td>
<td>$186,500</td>
</tr>
<tr>
<td>8/1/2020</td>
<td>9/30/2025</td>
<td>692M15-20-4-0005</td>
<td>To enhance the quantitative understanding of all phenomena and mechanisms that govern fuel injection, fuel-air mixing, ignition, burning and the heat flux generated during the operation of FAA’s NexGen burner.</td>
<td>University of Cincinnati</td>
<td>$100,434</td>
</tr>
<tr>
<td>8/1/2020</td>
<td>7/31/2021</td>
<td>692M15-20-4-0006</td>
<td>Evaluation of structural integrity assessment tools for higher-criticality metal additive manufacturing parts.</td>
<td>Southwest Research Institute</td>
<td>$200,000</td>
</tr>
<tr>
<td>7/13/2020</td>
<td>7/12/2021</td>
<td>692M15-20-4-0001</td>
<td>Probabilistic integrity and risk assessment of turbine engines, Phase 3.</td>
<td>Southwest Research Institute</td>
<td>$1,125,000</td>
</tr>
<tr>
<td>10/1/2019</td>
<td>9/1/2022</td>
<td>692M15-19-4-0004</td>
<td>Develop method to determine surface drop collection efficiency using microwave technique.</td>
<td>Baylor University</td>
<td>$216,125</td>
</tr>
<tr>
<td>Award Date</td>
<td>End Date</td>
<td>Grant Award No.</td>
<td>Subject/Purpose</td>
<td>Institution</td>
<td>Total Obligations</td>
</tr>
<tr>
<td>------------</td>
<td>----------</td>
<td>----------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------</td>
<td>------------------</td>
</tr>
<tr>
<td>9/26/2019</td>
<td>9/29/2021</td>
<td>692M15-19-4-0009</td>
<td>Focus on emerging issues in vehicle automation and electric propulsion systems, as well as evaluation of data mining approaches to monitor and quantify degraded breaking conditions, and emerging issues in air transportation.</td>
<td>Massachusetts Institute of Technology</td>
<td>$179,053</td>
</tr>
<tr>
<td>9/26/2019</td>
<td>3/26/2021</td>
<td>692M15-19-4-0005</td>
<td>Investigate alternative ways of acceptance of unbound pavement materials (subgrade, subbase, and base) based on modulus, density, or other material properties.</td>
<td>University of El Paso Texas</td>
<td>$155,000</td>
</tr>
<tr>
<td>9/13/2019</td>
<td>9/30/2021</td>
<td>692M15-19-4-0003</td>
<td>Develop methodologies that can be used to decide the cutoff value on the tail of input variable distributions.</td>
<td>Rutgers, The State University of New Jersey</td>
<td>$260,310</td>
</tr>
<tr>
<td>9/1/2019</td>
<td>9/30/2022</td>
<td>692M15-19-4-0010</td>
<td>Conduct research in the areas of lighting technology, human factors, and photometry and radiometry studies focused on airport lighting and visual guidance systems and applications.</td>
<td>Rensselaer Polytechnic Institute</td>
<td>$216,125</td>
</tr>
<tr>
<td>5/19/2018</td>
<td>5/18/2021</td>
<td>692M15-19-4-0003</td>
<td>Metal and composite material model development for engine related impact failure.</td>
<td>George Mason University</td>
<td>$1,800,000</td>
</tr>
<tr>
<td>4/6/2018</td>
<td>1/6/2021</td>
<td>692M15-19-4-0002</td>
<td>Support research for head-worn/helmet-mounted Displays (HW/HMD) and Enhanced/ Synthetic/ Combined Vision Systems for rotorcraft. Iowa University’s Operator Performance Laboratory (IU-OPL) utilizes an MI-2 helicopter equipped with several sensors and an HMD to conduct flight trials in various environmental conditions to determine pilot performance and human factors issues with vision systems devices. Through the agreement, IU-OPL also assists the FAA with human factors expertise including photometry and luminance measurements for OPL trials to a helipad with</td>
<td>University of Iowa</td>
<td>$875,068</td>
</tr>
<tr>
<td>Award Date</td>
<td>End Date</td>
<td>Grant Award No.</td>
<td>Subject/Purpose</td>
<td>Institution</td>
<td>Total Obligations</td>
</tr>
<tr>
<td>------------</td>
<td>----------</td>
<td>-----------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>9/30/2017</td>
<td>9/29/2020</td>
<td>2017-G-012</td>
<td>FAA provided lighting, as well as FAA WJHTC S76 helicopter simulator HW/HMD device integration.</td>
<td>University of Massachusetts Amherst</td>
<td>$1,900,905</td>
</tr>
<tr>
<td>8/10/2017</td>
<td>8/31/2021</td>
<td>2017-G-011</td>
<td>Conduct synthesis and evaluation of ultra-fire resistant polymers that are environmentally benign.</td>
<td>Baylor University</td>
<td>$987,772</td>
</tr>
<tr>
<td>6/1/2017</td>
<td>5/31/2022</td>
<td>2017-G-006</td>
<td>Conduct research on emerging aviation fire threats, including lithium battery fires.</td>
<td>Rutgers, The State University of New Jersey</td>
<td>$436,830</td>
</tr>
<tr>
<td>6/1/2017</td>
<td>10/31/2021</td>
<td>2017-G-007</td>
<td>Planning and development of roadmap for Emerging Technologies Research.</td>
<td>Wichita State University</td>
<td>$1,785,000</td>
</tr>
<tr>
<td>4/15/2017</td>
<td>12/31/2021</td>
<td>2017-G-004</td>
<td>Gather flight load data for heavy air tankers and develop methodologies to correlate the atmospheric turbulence to structural loads.</td>
<td>Wichita State University</td>
<td>$449,865</td>
</tr>
<tr>
<td>3/13/2017</td>
<td>6/30/2022</td>
<td>2017-G-003</td>
<td>Develop methods and gather data necessary for safe integration of Active Flutter Suppression into new airplanes, and also, to establish safe and achievable free play limits for transport category airplanes.</td>
<td>University of Washington</td>
<td>$1,700,000</td>
</tr>
<tr>
<td>9/1/2016</td>
<td>1/6/2021</td>
<td>2016-G-015</td>
<td>Conduct research for head-worn/helmet-mounted displays and artificial intelligence/machine learning techniques geared towards increasing helicopter safety. Rowan’s CAVE VR Lab is being used to develop a VR model of the FAA’s Helicopter, Landing Sites, and Flight Instruments.</td>
<td>Rowan University</td>
<td>$853,212</td>
</tr>
<tr>
<td>Award Date</td>
<td>End Date</td>
<td>Grant Award No.</td>
<td>Subject/Purpose</td>
<td>Institution</td>
<td>Total Obligations</td>
</tr>
<tr>
<td>------------</td>
<td>----------</td>
<td>-----------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>8/22/2016</td>
<td>8/21/2020</td>
<td>2016-G-017</td>
<td>Conduct research to identify and integrate essential fire properties into a numerical framework to better understand and predict flammability of materials.</td>
<td>University of Maryland</td>
<td>$1,487,103</td>
</tr>
<tr>
<td>8/22/2016</td>
<td>2/28/2021</td>
<td>2016-G-012</td>
<td>Conduct research in the major areas of: Ground-Based Communications, Navigation and Surveillance; Platform-Based Communications, Navigation and Surveillance; Satellite Based Communications, Navigation and Surveillance; and Airport infrastructure, with particular emphasis on bird strike mitigation.</td>
<td>Ohio University</td>
<td>$999,958</td>
</tr>
<tr>
<td>8/1/2016</td>
<td>7/30/2021</td>
<td>2016-G-007</td>
<td>Dynamic material testing for metal and composite engine related impact failure modeling.</td>
<td>The Ohio State University</td>
<td>$5,398,800</td>
</tr>
<tr>
<td>8/1/2016</td>
<td>7/31/2021</td>
<td>2017-G-005</td>
<td>Composite material testing and model development for engine fragment impact.</td>
<td>AZ Board of Regents on behalf of Arizona State University</td>
<td>$1,900,905</td>
</tr>
<tr>
<td>7/1/2016</td>
<td>7/31/2021</td>
<td>2016-G-008</td>
<td>Aerospace Working Group Engine Related Impact Failure and Cabin Interior support, model QA, modeling guidelines development.</td>
<td>Central Connecticut State University</td>
<td>$1,021,835</td>
</tr>
<tr>
<td>4/18/2016</td>
<td>12/31/2020</td>
<td>2016-G-005</td>
<td>Develop SMART (SMall Aircraft Risk Technology) software, a probabilistic risk assessment and risk management tool for small airplanes.</td>
<td>The University of Texas at San Antonio</td>
<td>$5,400,000</td>
</tr>
<tr>
<td>9/1/2015</td>
<td>2/26/2021</td>
<td>2015-G-016</td>
<td>Develop damage tolerance and risk assessments methods for turbine engine life limited parts.</td>
<td>Southwest Research Institute</td>
<td>$20,070,000</td>
</tr>
<tr>
<td>8/27/2015</td>
<td>12/20/2021</td>
<td>2015-G-017</td>
<td>Test and analysis of emerging technologies used in fuselage and wing applications.</td>
<td>Drexel University</td>
<td>$7,504,413</td>
</tr>
<tr>
<td>4/10/2015</td>
<td>9/30/2020</td>
<td>2015-G-007</td>
<td>Develop nondestructive method to measure residual stress in turbine engine parts.</td>
<td>University of Cincinnati</td>
<td>$5,600,133</td>
</tr>
</tbody>
</table>
4. Interagency and Other Agreements

The table below details the FAA’s active interagency agreements (IAA) and other vehicles such as memoranda of understanding (MOU), memoranda of agreement (MOA), memoranda of cooperation (MOC), other transaction agreements (OTA), project arrangements (PA), cooperative agreements (CA), research and development agreements (RDA), and reimbursable agreements (RA).

<table>
<thead>
<tr>
<th>Period of Performance</th>
<th>Contract No.</th>
<th>Vehicle Type</th>
<th>Vendor Org</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start Date</td>
<td>End Date</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9/24/2020</td>
<td>N/A</td>
<td>692M15-19-T-00019</td>
<td>OTA Teledyne</td>
<td>Provide a data driven process for the verification and validation of the safe installation of Lithium Ion batteries used in aerospace applications.</td>
</tr>
<tr>
<td>8/31/2020</td>
<td>N/A</td>
<td>692M15-20-T-00007</td>
<td>OTA EP systems</td>
<td>Provide a data-driven process for the verification and validation of the safe installation of Lithium Ion batteries used in aerospace applications.</td>
</tr>
<tr>
<td>7/30/2020</td>
<td>7/30/2025</td>
<td>693KA8-20-D-00013</td>
<td>OTA University Corporation for Atmospheric Research; National Center for Atmospheric Research</td>
<td>Conduct meteorological research and development, related to inflight icing, restricted ceilings and low visiblity, convective weather, numerical weather prediction modeling and data assimilation techniques, and turbulence.</td>
</tr>
<tr>
<td>Period of Performance</td>
<td>Contract No.</td>
<td>Vehicle Type</td>
<td>Vendor Org</td>
<td>Purpose</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------------------</td>
<td>--------------</td>
<td>-------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>7/9/2020</td>
<td>693KA9-20-N-00013</td>
<td>IAA</td>
<td>KBR Wyle</td>
<td>Research and Development support.</td>
</tr>
<tr>
<td>5/11/2020</td>
<td>692M15-18-N-00019</td>
<td>IAA</td>
<td>Volpe National Transportation System Center</td>
<td>Conduct data collection and analysis of high intensity runway edge lights – LED under varying low-visibility conditions using infrared and visible cameras.</td>
</tr>
<tr>
<td>4/20/2020</td>
<td>692M15-20-N-00004</td>
<td>IAA</td>
<td>NASA AMES Research Center</td>
<td>Evaluate the proposed motion cueing criteria and provide technical support to the 14 CFR Part 60 revision.</td>
</tr>
<tr>
<td>Period of Performance</td>
<td>Contract No.</td>
<td>Vehicle Type</td>
<td>Vendor Org</td>
<td>Purpose</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-----------------</td>
<td>--------------</td>
<td>---------------------</td>
<td>---------</td>
</tr>
<tr>
<td>09/27/2019 - 9/26/2024</td>
<td>IA1-30333</td>
<td>IAA</td>
<td>NASA Langley</td>
<td>Continue research in complex digital airborne systems reliability, safety, risk assessment, and verification. This will include full aircraft systems, hardware, software, cybersecurity, installation, and maintenance of these systems. It may also include, but is not limited to: software digital systems, electrical systems, flight control mechanical, and rotorcraft systems.</td>
</tr>
<tr>
<td>Period of Performance</td>
<td>Contract No.</td>
<td>Vehicle Type</td>
<td>Vendor Org</td>
<td>Purpose</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------------</td>
<td>--------------</td>
<td>------------</td>
<td>---------</td>
</tr>
<tr>
<td>Start Date</td>
<td>End Date</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8/28/2019</td>
<td>8/28/2024</td>
<td>ANG-RM-ACT-19-CT-003396</td>
<td>RA</td>
<td>Science and Technology</td>
</tr>
<tr>
<td>6/5/2019</td>
<td>6/4/2024</td>
<td>692M15-19-T-00013</td>
<td>IAA</td>
<td>U.S. Air Force Lifecycle Management Center</td>
</tr>
<tr>
<td>3/19/2019</td>
<td>Indefinite</td>
<td>Unassigned</td>
<td>MOU</td>
<td>Southwestern Oklahoma State University</td>
</tr>
<tr>
<td>Period of Performance Start Date</td>
<td>Period of Performance End Date</td>
<td>Contract No.</td>
<td>Vehicle Type</td>
<td>Vendor Org</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>--------------------------------</td>
<td>--------------</td>
<td>--------------</td>
<td>------------</td>
</tr>
<tr>
<td>9/17/2018</td>
<td>12/31/2020</td>
<td>DTFAWA-10-C-00080</td>
<td>IAA</td>
<td>MITRE CAASD (Center for Advanced Aviation System Development)</td>
</tr>
<tr>
<td>8/1/2018</td>
<td>7/31/2023</td>
<td>692M15-18-T-00015</td>
<td>OTA</td>
<td>Battelle Memorial Institute</td>
</tr>
<tr>
<td>7/12/2018</td>
<td>7/11/2023</td>
<td>692M15-18-N-00016</td>
<td>IAA</td>
<td>Tyndall Air Force Base</td>
</tr>
<tr>
<td>6/28/2018</td>
<td>6/27/2023</td>
<td>Unassigned</td>
<td>MOU</td>
<td>OK Office of the Chief Medical Examiner</td>
</tr>
<tr>
<td>Period of Performance</td>
<td>Contract No.</td>
<td>Vehicle Type</td>
<td>Vendor Org</td>
<td>Purpose</td>
</tr>
<tr>
<td>----------------------</td>
<td>-------------</td>
<td>--------------</td>
<td>------------</td>
<td>---------</td>
</tr>
<tr>
<td><strong>Start Date</strong></td>
<td><strong>End Date</strong></td>
<td><strong>USAMRMC 123899/8.1 0.17</strong></td>
<td>MOU</td>
<td>Walter Reed Army Institute of Research</td>
</tr>
<tr>
<td>12/21/2017</td>
<td>12/20/2022</td>
<td></td>
<td></td>
<td>Rotations/laboratory training.</td>
</tr>
<tr>
<td><strong>Start Date</strong></td>
<td><strong>End Date</strong></td>
<td><strong>DTFAVP-17-X-00110</strong></td>
<td>IAA</td>
<td>Harris Miller and Hanson</td>
</tr>
<tr>
<td>7/18/2017</td>
<td>12/31/2021</td>
<td></td>
<td></td>
<td>Helicopter and fixed wing aircraft extended dose response study.</td>
</tr>
<tr>
<td><strong>Start Date</strong></td>
<td><strong>End Date</strong></td>
<td><strong>DTFACT-17-X-80002</strong></td>
<td>Interagency Agreement</td>
<td>National Centers for Environmental Prediction</td>
</tr>
<tr>
<td>7/1/2017</td>
<td>6/30/2022</td>
<td></td>
<td></td>
<td>Conduct aviation hazard diagnosis and forecast research and development.</td>
</tr>
<tr>
<td><strong>Start Date</strong></td>
<td><strong>End Date</strong></td>
<td><strong>DTFACT-17-V-00011</strong></td>
<td>MOA</td>
<td>Metropolitan Airports Commission</td>
</tr>
<tr>
<td>5/9/2017</td>
<td>5/8/2021</td>
<td></td>
<td></td>
<td>Conduct indoor navigation technology study for visually impaired passengers inside one of terminals at Minneapolis-St. Paul International Airport.</td>
</tr>
<tr>
<td><strong>Start Date</strong></td>
<td><strong>End Date</strong></td>
<td><strong>DTFACT-17-X-80000</strong></td>
<td>IAA</td>
<td>Ames Research Center</td>
</tr>
<tr>
<td>2/21/2017</td>
<td>2/20/2021</td>
<td></td>
<td></td>
<td>Design and conduct human-in-the-loop flight simulation experiments to develop and refine stabilized approach criteria.</td>
</tr>
<tr>
<td><strong>Start Date</strong></td>
<td><strong>End Date</strong></td>
<td><strong>NG-RN-000070</strong></td>
<td>RA</td>
<td>U.S. Forest Service</td>
</tr>
<tr>
<td>9/27/16</td>
<td>N/A</td>
<td></td>
<td>Massachusetts Port Authority</td>
<td>This MOU establishes a framework for cooperation by the FAA and the port authority in exploring, evaluating, and advancing changes or amendments to PBN procedures that reduce impacts from aircraft overflight noise, while at the same time maintaining the safety and efficiency benefits of PBN procedures at Boston.</td>
</tr>
<tr>
<td><strong>Start Date</strong></td>
<td><strong>End Date</strong></td>
<td><strong>DTFACT-16-X-0004</strong></td>
<td>IAA</td>
<td>Langley Research Center</td>
</tr>
<tr>
<td>9/15/2016</td>
<td>9/14/2021</td>
<td></td>
<td></td>
<td>Conduct research, development, and testing in the area of aircraft structures and materials.</td>
</tr>
<tr>
<td><strong>Start Date</strong></td>
<td><strong>End Date</strong></td>
<td><strong>DTFAWA-16-X-80009</strong></td>
<td>IAA</td>
<td>Earth System Research Laboratory</td>
</tr>
<tr>
<td>9/8/2016</td>
<td>Until terminated</td>
<td></td>
<td></td>
<td>Conduct meteorological research and development related to modeling and data assimilation techniques, and measurement of forecast quality.</td>
</tr>
<tr>
<td><strong>Start Date</strong></td>
<td><strong>End Date</strong></td>
<td><strong>DTFAWA-16-X-80009</strong></td>
<td>IAA</td>
<td>Earth System Research Laboratory</td>
</tr>
<tr>
<td>6/1/2016</td>
<td>5/31/2021</td>
<td></td>
<td></td>
<td>Conduct meteorological research and development related to modeling and data assimilation techniques, and measurement of forecast quality.</td>
</tr>
<tr>
<td>Period of Performance</td>
<td>Contract No.</td>
<td>Vehicle Type</td>
<td>Vendor Org</td>
<td>Purpose</td>
</tr>
<tr>
<td>----------------------</td>
<td>-------------</td>
<td>--------------</td>
<td>------------</td>
<td>---------</td>
</tr>
<tr>
<td>Start Date</td>
<td>End Date</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9/30/2015</td>
<td>9/30/2020</td>
<td>DTFAWA-15-A-80010</td>
<td>OTA</td>
<td>Pratt &amp; Whitney</td>
</tr>
<tr>
<td>9/30/2015</td>
<td>9/30/2020</td>
<td>DTFAWA-15-A-80012</td>
<td>OTA</td>
<td>Rolls-Royce</td>
</tr>
<tr>
<td>9/30/2015</td>
<td>9/30/2020</td>
<td>DTFAWA-15-A-80011</td>
<td>OTA</td>
<td>Boeing</td>
</tr>
<tr>
<td>9/30/2015</td>
<td>9/30/2020</td>
<td>DTFAWA-15-A-80016</td>
<td>OTA</td>
<td>America’s Phoenix, MDS Coating, and Delta Tech Ops</td>
</tr>
<tr>
<td>Period of Performance</td>
<td>Contract No.</td>
<td>Vehicle Type</td>
<td>Vendor Org</td>
<td>Purpose</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------------</td>
<td>--------------</td>
<td>------------</td>
<td>---------</td>
</tr>
<tr>
<td>Start Date</td>
<td>End Date</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9/16/2015 9/16/2020</td>
<td>DTFAWA-15-A-80013</td>
<td>OTA</td>
<td>General Electric</td>
<td>Under CLEEN Phase II: GE conducted extensive rig test validation and development of risk mitigation technologies for the TAPS III low emissions combustor, thus enabling the technology to meet the CLEEN II NOx target. GE is developing novel acoustic liner and fan noise source strength reduction technologies to combat the reduced noise treatment area available in low fan pressure ratio engines. MESTANG is an integrated aircraft power system, designed to support future “more-electric” aircraft architectures, that optimizes new power extraction, generation, distribution, and conversion systems. GE’s FMS software algorithms will optimize aircraft performance during the cruise and descent phases of flight.</td>
</tr>
<tr>
<td>8/5/2015 8/5/2020</td>
<td>DTFAWA-15-A-80015</td>
<td>OTA</td>
<td>Collins Aerospace (formerly known as United Technologies Corporation / Rohr Inc.)</td>
<td>Under CLEEN Phase II, Collins Aerospace is developing integrated propulsion system nacelle technology to reduce noise, fuel burn, and emissions. The company is advancing innovative acoustic treatment technologies and clean fan duct thrust reverser designs.</td>
</tr>
<tr>
<td>6/6/2014 11/6/2020</td>
<td>DTFACT-17-V-00009</td>
<td>OTA</td>
<td>Elbit Systems, Ltd.</td>
<td>Support use of new technologies present for EVS/SVS/CVS and HWD/HMD available to helicopter operators in order to research regulatory changes from potential minima on helicopter instrument approach procedures.</td>
</tr>
<tr>
<td>Period of Performance</td>
<td>Contract No.</td>
<td>Vehicle Type</td>
<td>Vendor Org</td>
<td>Purpose</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------------</td>
<td>--------------</td>
<td>------------</td>
<td>---------</td>
</tr>
<tr>
<td>9/24/2012 – Indefinite</td>
<td>N/A</td>
<td>Other</td>
<td>Royal Canadian Air Force</td>
<td>Forensic Toxicology Cases (≤ 10/yr.)</td>
</tr>
<tr>
<td>9/13/2012 – 2/28/2021</td>
<td>DTFACT-12-X-00009</td>
<td>IAA</td>
<td>Department of Energy / National Nuclear Security Administration / Sandia Site Office</td>
<td>Provide engineering support on various FAA airworthiness assurance programs.</td>
</tr>
<tr>
<td>8/23/2012 – 9/30/2037</td>
<td>DTFASO-10-H-00131</td>
<td>MOA</td>
<td>Delaware River and Bay Authority</td>
<td>Allow FAA to build and operate a research taxiway at Cape May County Airport.</td>
</tr>
<tr>
<td>7/10/2007 – 7/9/2012</td>
<td>AST – Being Updated</td>
<td>MOC</td>
<td>AST-CAMI</td>
<td>Collaboration, research, and training support.</td>
</tr>
<tr>
<td>10/1/1999 – Until terminated</td>
<td>PA-17</td>
<td>PA</td>
<td>Transport Canada</td>
<td>Conduct ground icing research.</td>
</tr>
</tbody>
</table>
5. International Agreements

The table below details the FAA’s active international agreements.

<table>
<thead>
<tr>
<th>Effective Date</th>
<th>FAA R&amp;D Program</th>
<th>Agreement Number</th>
<th>Partner</th>
<th>Objective/Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/19/2019</td>
<td>Harmonizing Safety and Environment Factors</td>
<td>NAT-I-3454-5-9</td>
<td>Eurocontrol</td>
<td>License of Base of Aircraft Data version 4</td>
</tr>
<tr>
<td>6/11/2019</td>
<td>Disbond Failures of Sandwich Structures</td>
<td>CON-I-8000-1-1</td>
<td>Technical University of Denmark</td>
<td>Sets forth the terms and conditions under which the FAA and DTU may cooperate to investigate the in-service disbond failures observed in composite sandwich aircraft structures.</td>
</tr>
<tr>
<td>12/13/2017</td>
<td>NextGen/SESAR Air Traffic Management Modernization, Civil Aviation Research and Development and Global Interoperability</td>
<td>NAT- I-9406A1-1-1</td>
<td>European Union</td>
<td>Cooperation on research and development for ATM modernization programs, NextGen and SESAR, taking into account the interests of civil and military airspace users.</td>
</tr>
<tr>
<td>3/28/2017</td>
<td>GBAS</td>
<td>NAT-I-4016-I</td>
<td>Brazil ANSP</td>
<td>Research and analysis of data collected from ionospheric disturbances and its effect on the system performance of Ground-Based Augmentation Systems.</td>
</tr>
<tr>
<td>9/4/2015</td>
<td>Aircraft Icing</td>
<td>CON-I-5102-1-1</td>
<td>Finnish Transport Safety Agency</td>
<td>Aircraft icing research, including frost formation studies, computation fluid dynamics for ground de/anti-icing fluids, and de/anti-icing fluids aerodynamics characteristics.</td>
</tr>
<tr>
<td>1/6/2015</td>
<td>Air Traffic Management and Air Transportation Research</td>
<td>NAT- I-3454-1-5</td>
<td>Eurocontrol</td>
<td>Exchange research and development activities such as: procedures, operational safety, capacity enhancements, research results, publications, and/or technical reports related to air traffic management performance research and air transportation research.</td>
</tr>
<tr>
<td>12/9/2013</td>
<td>Aircraft Icing</td>
<td>CON-I-3101-1</td>
<td>Centre National de la Recherche Scientifique</td>
<td>Research of inflight icing conditions, including convective weather ice crystal and super cooled large droplet icing conditions.</td>
</tr>
<tr>
<td>12/9/2013</td>
<td>Aircraft Icing</td>
<td>CON-I-3101-1-1</td>
<td>Centre National de la Recherche Scientifique</td>
<td>Research of inflight icing environment and the instrumentation used to measure the variables employed to describe those environments.</td>
</tr>
<tr>
<td>Effective Date</td>
<td>FAA R&amp;D Program</td>
<td>Agreement Number</td>
<td>Partner</td>
<td>Objective/Purpose</td>
</tr>
<tr>
<td>---------------</td>
<td>----------------</td>
<td>-----------------</td>
<td>---------</td>
<td>------------------</td>
</tr>
<tr>
<td>10/7/2011</td>
<td>Aircraft Icing</td>
<td>CON-I-2901-1</td>
<td>Bureau of Meteorology, Australia</td>
<td>Research of inflight icing conditions, including super cooled large droplet conditions.</td>
</tr>
<tr>
<td>10/7/2011</td>
<td>Aircraft Icing</td>
<td>CON-I-2901-1-1</td>
<td>Bureau of Meteorology, Australia</td>
<td>Research of inflight icing environments and the instrumentation used to measure the variables employed to describe those environments.</td>
</tr>
<tr>
<td>12/9/2011</td>
<td>Aircraft Icing</td>
<td>NAT-I-8917-1</td>
<td>National Research Council of Canada</td>
<td>Aircraft and Propulsion System Icing Research (Annex 1 to MOC): This agreement forms cooperative research on simulation of ice crystal environments for the investigation of effects of such environments on engines.</td>
</tr>
<tr>
<td>9/12/2011</td>
<td>System Safety Management</td>
<td>AIA/CA-52-8-10</td>
<td>CAA- Netherlands</td>
<td>Identify operational enhancements, constraints, and procedures needed to improve the safety and efficiency of terminal area operations.</td>
</tr>
<tr>
<td>6/19/2007</td>
<td>Airport Technology Capacity</td>
<td>AIA/CA-5 Annex 16</td>
<td>La Direction Generale de L’Aviation Civile</td>
<td>Coordination of R&amp;D activities and the sharing of information resulting from related studies, tests, and analyses in the field of airfield pavement.</td>
</tr>
<tr>
<td>9/24/2004</td>
<td>Cooperation in Air Traffic Management Research</td>
<td>NAT-I-3454-1-1</td>
<td>Eurocontrol</td>
<td>Collaborate on Wave Vortex activities – provision of active or real-time sensing and alerting of wake vortex impacts, collaboration on use of current measures and analysis techniques to identify wake dissipation standards/responses under varying operational conditions, and analysis of impact of newer generations of aircraft on proposed wake separation standards.</td>
</tr>
<tr>
<td>Effective Date</td>
<td>FAA R&amp;D Program</td>
<td>Agreement Number</td>
<td>Partner</td>
<td>Objective/Purpose</td>
</tr>
<tr>
<td>---------------</td>
<td>----------------------------------</td>
<td>--------------------</td>
<td>--------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>9/24/2004</td>
<td>NA</td>
<td>NAT-I-3454</td>
<td>Eurocontrol</td>
<td>Appendices 2, 4, 5, and 6 to Annex 5 of NAT-I-3454 allow for the exchange of trajectory data and modeling tools information between the two entities.</td>
</tr>
<tr>
<td>9/24/2004</td>
<td>Air Traffic Management Research</td>
<td>NAT-I-3454-1</td>
<td>Eurocontrol</td>
<td>Air Traffic Management Research: collaborate and share experiences on various ATM research topics that are of interest to both the United States and Europe.</td>
</tr>
<tr>
<td>7/10/2001</td>
<td>System Safety Management</td>
<td>AIA/CA-52</td>
<td>CAA - Netherlands</td>
<td>Establishes a method of cooperation in R&amp;D programs in the area of aviation system safety including the risks to the public connected with civil aviation activities and operations in the vicinity of airports.</td>
</tr>
<tr>
<td>4/29/1999</td>
<td>Aircraft Icing</td>
<td>NAT-I-9403-1</td>
<td>Environment and Climate Change Canada</td>
<td>Collaborative research in the area of inflight icing environments and the instrumentation used to measure the variables employed to describe those environments.</td>
</tr>
<tr>
<td>6/18/1970</td>
<td>Aircraft Icing</td>
<td>MOC NAT-I-0831 PA-17</td>
<td>Transport Canada</td>
<td>Deicing and Anti-Icing Research: The investigation of aerodynamic flow-off characteristics of anti-icing fluids contaminated with different types of frozen precipitation; the investigation of the effectiveness of proposed laboratory test procedures in evaluating aircraft anti-icing fluids’ failure modes in mixed icing conditions; and the investigation into other associated aircraft deicing problems and issues.</td>
</tr>
</tbody>
</table>

Back to Top