

Division/Attached Agency: Strategic Industries Division

Program Name: Office of Aerospace Development

Program ID: BED 120

I. PROGRAM PLANNING

Problem, issue or opportunity statement: Describe the problem(s), issue(s) and/or opportunity(ies) your program is attempting to respond to. Identify the participants (individuals, companies, industry sectors, etc.) engaged in this problem, issue and/or opportunity.

The aerospace industry has played a pivotal role in expanding and diversifying our national economy. From aviation to space exploration, aerospace research and development has forged new inroads in science and technology, dramatically advanced our national engineering and manufacturing expertise, spurred spinoffs of commercial products that have significantly enhanced our qualities of life, provided rich educational and training opportunities for K-12 and college students, and ultimately afforded new frontiers for humankind to explore and develop.

Last year, NASA outlined a new roadmap for implementing our national Vision for Space Exploration (VSE) – one that embraces the development of innovative technologies, knowledge and infrastructure, articulated through multinational partnerships, that can lead us back to the moon, to Mars and beyond. To meet this substantial challenge, considerable resources will need to be devoted to the development, testing and evaluation of new technologies to support both robotic and human missions, to the training of scientists, engineers and astronauts to help design and implement these missions, and to educating the general public. Hawaii's diverse natural resources, unique geographic terrain and location, strategic technological assets, and resident scientific and engineering expertise make our state an ideal location to seed, grow and sustain a wide variety of space-related activities that can support our national space efforts while providing unique opportunities to help expand and diversify our local technology sectors.

For nearly half a century, our state has been a major contributor to and beneficiary of space exploration, beginning in the 1960s with education and training programs for the Apollo astronauts and the development of world-class astronomical facilities atop Mauna Kea. The University of Hawaii, the U.S. military, and numerous companies statewide have engaged in nationally-funded programs pioneering planetary geosciences, satellite communications, remote sensing, and space reconnaissance. Each county has established world-class space-related facilities and programs providing major scientific, educational and commercial benefits – e.g., the Mauna Kea Science Reserve on the Big Island, attracting more than \$1billion to support 13 major international telescopes; Science City atop Mt. Haleakala on Maui supporting our nation's largest space surveillance site; the Institute of Geophysics and Planetology on Oahu, which has fielded more than 40 NASA principal investigators engaged in both basic and applied research; and the Pacific Missile Range Facility on Kauai (the island's largest employer) providing the world's leading multi-environment range supporting sea, air and space operations.

Looking to the future, the University is applying its resident expertise in adaptive optics, lidar/laser technology and remote sensing to develop and commercialize advanced sensor technologies for astronomical research, atmospheric/oceanic monitoring and modeling, terrestrial/coastal resource mapping, and disaster management and mitigation. Local companies such as Oceanit, Solipsys, Trex Enterprises, Hoku Scientific and NovaSol are working to develop new commercial products and services to support weather forecasting, land and coastal resource assessment, advanced air traffic control, clean energy technologies, air defense and military command & control systems, and advanced optical



communications and electro-optical tracking systems. Major aerospace corporations (e.g., Boeing, BAE Systems, Lockheed Martin, Northrop Grumman, Raytheon), already operating in our State, have the potential of expanding operations through Hawaii as a bridge to Asia-Pacific markets, with the potential of developing advanced systems for aviation maintenance and training, satellite communications, and space tracking, surveillance & reconnaissance systems servicing the Pacific Basin. And our mid-Pacific, near equatorial location and long-standing ties with nations throughout the Asia-Pacific region make Hawaii an ideal location for commercial space launch activities – including land, sea, and air-based operations – and both the University of Hawaii and entrepreneurial companies such as Rocketplane Kistler, Microcosm, and Space Systems/LORAL are exploring opportunities to launch both staged rockets and spaceplanes from various locations statewide to transport scientific experiments, satellites and tourists to space.

Need and partners: Specify the need for government intervention. Provide supporting evidence. Identify any partners you will be working with to address the problem, issue and/or opportunity.

The Office of Aerospace Development (OAD) was established to serve as a focal point within State government to facilitate dialogue and coordination among Hawaii's government, private and academic sectors, and between State-based organizations and overseas entities, both public and private, to promote the growth of Hawaii's aerospace industry. A number of states (e.g., AK, OK, CA, VT, PA, CO, IL, DE, OH, MA, VA, MT, IA, TX, MA, WV, MI, FL) have created similar governmental or quasigovernmental offices and agencies to (1) serve as a point of contact representing state aerospace interests and activities, and (2) help coordinate public and private assets toward the development of new aerospace products and services. For nearly two decades, DBEDT (initially through the Office of Space Industry and subsequently through its Energy, now Strategic Industries, Division) has played a significant role in facilitating aerospace activities in Hawaii, including international conferences and workshops, public exhibitions, research and development projects, and public outreach programs. In doing so, the department has networked with multiple local (state agencies, the University of Hawaii and community colleges, public and private schools, and local companies), and both national and international aerospace agencies and institutions (e.g., NASA, NOAA, USGS, NSF, DoC, DoE, OSTP, JAXA, CSA, ESA), and is well positioned to continue its efforts toward expanding the state's scientific, educational and commercial aerospace base. However, establishing a formal office within DBEDT dedicated to aerospace development will further realize the growth potential of this sector by (1) greatly enhancing the public visibility of these efforts, (2) providing a centralized point of contact for both local and out-of-state inquiries on Hawaii's aerospace activities, (3) facilitating coordination among public and private entities in the development of new aerospace enterprise, (4) helping identify and assess federal and other external resources to facilitate this development, and (5) demonstrating the state's commitment to advancing an industry with significant scientific, educational and commercial potential.

Desired results (outputs, outcomes and impacts): Identify desired results, what success will look like, by describing what you expect to achieve near (0-2 years) and long-term (2-6 years).

Near-Term (0-2 years):

- 1. Conduct a preliminary assessment of current status and future potential of Hawaii's aerospace industry through (a) a review of state, federal and international aerospace initiatives and priorities, including analysis of current aerospace demands and projected trends, both national and global; and (b) a comprehensive survey of Hawaii's existing resources, infrastructure, ongoing R&D, and other factors impacting the State's capabilities and strategic advantages in aerospace-related fields, including an assessment of how these resources and capabilities can be utilized to meet current/projected global aerospace requirements and thereby grow/diversify the State's economy.
- 2. Establish an Aerospace Advisory Board, comprised of distinguished leaders from Hawaii's government, academic and private sectors, as well as globally-renown aerospace professionals, that will convene semi-annually to help monitor and assess aerospace development statewide, providing



written reviews and policy recommendations to the State Administration and Legislature to (a) identify strategic areas for Hawaii to expand and diversify aerospace-related activities statewide; and (b) propose innovative strategies by which workforce and business development programs in aerospace-related fields may be realized.

- 3. Conduct the 2007 and 2008 annual JUSTSAP (Japan-U.S. Science, Technology & Space Applications Program) Symposia in Hawaii, providing unique opportunities for researchers at local universities, entrepreneurs from Hawaii's private sector, State and County government officials, and educators statewide to form collaborative R&D, education and training partnerships with top aerospace professionals from government (e.g., NASA; the Japan Space Exploration Agency), industry (e.g., Boeing, Lockheed Martin, Mitsubishi Corp., NEC Corp.), and major research universities (e.g., the Tokyo Institute of Technology, the University of Tokyo, Stanford, Caltech), while approximately \$200K in annual tourist-related revenues.
- 4. Represent Hawaii at national/global aerospace meetings, conferences and exhibitions, including the Aerospace States Association (ASA) semi-annual board meetings (Washington, D.C.); the National Space Foundation Symposium (Colorado Springs); the American Institute of Aviation & Aeronautics (AIAA) National Symposium (San Jose); and the NASA Space Exploration Symposium (Houston) to promote interest in and support for Hawaii-based aerospace activities.
- 5. Network with aerospace professionals at NASA Headquarters and NASA Regional Centers (Johnson Space Center/Houston; Marshall Space Flight Center/Alabama; Ames Research Center and the Jet Propulsion Laboratory/California), and at aerospace companies nationwide (Boeing, Lockheed Martin, Raytheon, SAIC, Northrop Grumman) to build public-private partnerships supporting collaborative aerospace ventures.
- 6. Promote public education and community outreach activities to help inform local citizens about the educational and career options in aerospace, as well as Hawaii's current activities and future potential in this industry, with the goal of inspiring young adults to pursue STEM-related disciplines and ultimately help grow our local tech industries.
- 7. Publish annual reports and establish/maintain a website highlighting Hawaii's current activities and future potential in aerospace.
- 8. Inaugurate the Pacific International Space Center for Exploration Systems (PISCES) in Hawaii, establishing a PISCES office at the University of Hawaii at Hilo, developing a strategic build-out plan for the Center, and conducting preliminary robotic and in-situ resource utilization field tests on Mauna Kea and at other locations statewide.
- 9. Obtain a commercial spaceport license for Honolulu International Airport to enable spaceplanes to launch and land in Hawaii.

Long-Term (2-6 years):

- 1. Continue to monitor and report on trends/opportunities in the global space industry.
- 2. Maintain the Aerospace Advisory Board and continue to provide industry updates and policy recommendations to the Administration and State Legislature.
- Continue to coordinate the annual symposia and year-round project team activities of JUSTSAP, as well as other national and international space conferences and exhibitions in Hawaii, leading to the development of new aerospace programs and activities in Hawaii.



- 4. Continue to represent Hawaii at national and global aerospace meetings, conference and exhibitions, and to network our state with aerospace agencies, institutions and corporations to catalyze public-private partnerships between Hawaii and these entities to promote international collaboration in space exploration and related scientific, educational and commercial benefits for Hawaii.
- 5. Expand public education and community outreach activities to help inform local citizens about the educational and career options in aerospace, as well as Hawaii's current activities and future potential in this industry, with the goal of inspiring young adults to pursue STEM-related disciplines and expand our state's technically-training workforce. Targeted activities will include:
 - Promoting summer/year-round internship and certification programs, sponsored by university laboratories and Hawaii-based companies, that will enable high school and college students to gain practical, "hands-on" experience in applied research, including the design, development, and utilization of research equipment and protocols, as well as to make invaluable professional contacts for developing their future careers.
 - Developing "career-pathing" materials and activities (interactive CD-ROMs; community-based career workshops) that highlight options and opportunities in aerospace.
 - Sponsoring community outreach activities (aerospace exhibitions at local museums, shopping malls); astronaut/aerospace engineer visits to local schools).
 - Supporting aerospace design competitions (e.g., for the development of PISCES' simulated lunar facility), with winners awarded trips to mainland NASA facilities and aerospace companies to participate in aerospace-related R&D (e.g., project team meetings; space launch activities).
 - Identifying and promoting opportunities for local science teachers to engage in mainland internship and certification programs with NASA and private industry.
- 6. Establish PISCES as an independent, financially self-supporting entity conducting field testing and technology development activities; simulation and training exercises; the design, testing and evaluation of space communications, power, and life support systems; and the development of an analog lunar outpost for technology demonstration and astronaut training supporting human missions to the Moon.
- 7. Expand Hawaii's operation as a commercial spaceport, facilitating space tourism (e.g., through launches of spaceplanes and other suborbital vehicles development by Rocketplane Kistler, Zero-G Corporation, Space Adventures, and other firms) and the launch of smallsats and scientific experiments (using "next generation" hybridized launch vehicles) from the Pacific Missile Range Facility, floating sea platforms, and commercial aircraft (using "underbelly" deploys).
- 8. Explore and promote new opportunities for aerospace-related research, education and commercial development in Hawaii (e.g., prototyping space-based technologies and systems to provide alternative and renewable sources of energy).

Influential Factors: List the factors you believe will influence your ability to impact the problem or opportunity. (Things that support success and barriers to success.)

- 1. Sustained internal support (a programmatic and financial commitment from our State Administration and Legislature to make aerospace development a high priority for Hawaii).
- 2. Continued external support (through federal/corporate alliances and funding).
- 3. Our ability to successfully market Hawaii overseas as an international leader in space exploration.



- 4. Our ability to successfully communicate to local communities the diverse scientific, educational and economic opportunities and benefits that aerospace can bring to our state, as well as to establish a "common vision" for developing Hawaii's aerospace industry (based upon these opportunities and benefits) to help guide/coordinate our collective efforts.
- 5. Our ability to engage all sectors of our economy, public and private, in this enterprise.
- 6. Our federal government's ability to chart a sustainable course for space exploration, with long-term programmatic and fiduciary commitments.

Strategies: List the general successful strategies or "best practices" that have helped other programs achieve the kind of results your program promises.

- 1. Involve input and participation from all three economic development sectors (government, academia and industry) in assessing opportunities, developing strategies, and implementing activities to support aerospace development in Hawaii.
- 2. Link Hawaii's aerospace assets and capabilities (supply) to national and global aerospace industry trends and projected needs (demand) in formulating action plans (or logic models!).
- 3. Use "alternative futures" scenarios (similar to those adopted by NASA's Advanced Concepts Office) to project desirable futures and define critical paths to achieve desired results.
- 4. Wherever possible, couple aerospace education/training programs with industry development initiatives to balance evolution of employment creation and workforce development.

Assumptions: State the assumptions behind *how* and *why* the change strategies you have identified will work.

- Partnerships among Hawaii's government, academic and industry sectors can help leverage/synergize strategic resources and ensure that a broader cross-section of societal needs are addressed in assessing opportunities, developing strategies, and implementing activities to support aerospace development in Hawaii.
- 2. Hawaii has significant geographical, scientific, technological and environmental assets that are comparatively unique, and can be effectively integrated into development planning to maximize the State's competitiveness in bidding for federal and other external funding support.
- 3. Using an "alternative futures" approach to long-term strategic planning can provide critical insights into the best methodologies for utilizing present-day assets and capabilities to help achieve long-term visions and goals.
- 4. Coupling education/training programs with industry development can help ensure that (a) we have an adequately trained workforce to meet industry demands (short- and long-term), and (b) that there will be adequate local employment opportunities for Hawaii's high school/college students when they graduate.



II. PROGRAM IMPLEMENTATION

Resources: Describe the resources or influential factors available to support your program.

- State funding appropriated through SB907 to support PISCES, JUSTSAP, and State participation at national and global aerospace conferences and exhibitions.
- Legislative Resolution (from 2006 Session) supporting the design, development and implementation of PISCES.
- Matching funds being solicited through NASA's Innovative Partnership Program (IPP) to support the
 field-testing and evaluation of intelligent robotic systems, in-situ resource utilization technologies, and
 other programs designed to facilitate future robotic and human lunar missions.
- Memorandum of Understanding between NASA Ames Research Center and the State of Hawaii to promote collaborative ventures supporting space exploration.
- Growing university and private sector interest in developing/diversifying aerospace-related activities statewide.
- Ongoing inquiries by major and entrepreneurial mainland aerospace corporations wishing to establish
 or expand operations in Hawaii.
- State's expanding collaboration with Japan and other Pacific-rim nations to promote multinational space ventures.
- Aerospace industry at turning point in developing new space technologies/applications/missions; those states that "get in on ground floor" (over next 12-18 months) will reap the rewards.

Activities: Describe each of the activities you plan to conduct within your program.

As mandated through SB907, the primary goals **(G)** and associated activities **(A)** of OAD will be as follows (Note: Activities supporting each goal are listed in parentheses, and some activities support more than one goal):

Program Goals

- **G1:** Identify and promote opportunities for expanding and diversifying aerospace activities in Hawaii, including but not limited to programs related to applied optics, astronomy and astrophysics, aviation, dual-use technology, environmental monitoring, meteorology, remote sensing, satellite communications, and commercial space launch. (A1, A2, A3, A4, A5, A7, A11)
- **G2:** Serve as a catalyst in forging partnerships between the University of Hawaii and local businesses to (1) improve the relevance and quality of university training to support the growth and diversification of Hawaii's aerospace industry; (2) identify entrepreneurial opportunities for commercializing innovative spinoffs from basic research; and (3) facilitate technology transfer from the university to the private sector to expedite commercialization. (A2, A4, A5, A7)
- **G3:** Assist the University of Hawaii, local companies, research institutions, and other interested organizations in establishing partnerships with corporate, government, and university entities overseas that can promote and enhance Hawaii's aerospace industry. (A2, A3, A4, A5, A7, A11)



- **G4:** Help leverage aerospace and related technological capabilities in Hawaii's government, academic and private sectors to enhance our State's ability to procure both federal and private research and development grants and to make Hawaii more competitive in national and global aerospace markets. (A2, A3, A4, A5, A7, A8, A9, A10).
- **G5:** Promote innovative education and workforce development programs that will enhance public awareness of our State's aerospace potential and enable local citizens to pursue employment in Hawaii's aerospace industry. (A2, A5, A6, A7, A9, A10)
- **G6:** Assess the effectiveness of existing and develop new publications, exhibits, and other sources of information marketing Hawaii's space-related activities to both professional communities and the general public. (A1, A2, A10)
- **G7:** Monitor national and global trends in the aerospace industry and recommend programs and policies that can support aerospace industry development statewide. (A1, A2, A11)
- **G8:** Increase contact and maintain liaison with the National Aeronautics & Space Administration (NASA) and other federal agencies and facilities supporting aerospace development. (A2, A3, A4, A5, A7).
- **G9:** Serve as a central point of contact for State government that can respond to both local and out-of-state inquiries concerning Hawaii's aerospace-related interests and activities. (A9, A10, A12)

Program Activities

- A1: Conduct aerospace survey.
- A2: Establish and maintain Aerospace Advisory Board
- **A3:** Attend national and global aerospace conferences and exhibitions
- A4: Participate in networking telecons/meetings with aerospace agencies, institutions and companies.
- A5: Coordinate annual JUSTSAP Symposium in Hawaii.
- A6: Conduct public education and community outreach activities.
- A7: Work with UHH, NASA and other institutions to inaugurate and develop PISCES.
- **A8:** Work with FAA to obtain commercial spaceport license for Hawaii.
- **A9:** Establish website for Hawaii's aerospace industry.
- **A10:** Review existing and develop new marketing materials for Hawaii's aerospace industry.
- **A11:** Monitor trends and opportunities in global aerospace industry.
- A12: Respond (via phone/e-mail/other correspondence) to inquiries on Hawaii's aerospace industry.
- A13: Formerly establish OAD and position of OAD director on DBEDT's organization chart (per SB907).



Outputs: For each program activity, identify what outputs you aim to produce

- For **A1** A comprehensive and detailed assessment of current status and future potential of Hawaii's aerospace industry.
- For **A2** A set of recommended policies and guidelines to help identify strategic opportunities for aerospace in Hawaii and innovative strategies to help realize them.
- For **A3** Enhanced awareness of Hawaii's aerospace resources/programs/potential and increased professional contacts with and support from major NASA centers, aerospace companies, and other institutions engaged in aerospace research, education and commercial development.
- For **A4** Enhanced awareness of Hawaii's aerospace resources/programs/potential and increased professional contacts with and support from major NASA centers, aerospace companies, and other institutions engaged in aerospace research, education and commercial development.
- For **A5** An international conference supporting delegates from around the Pacific Rim to discuss opportunities for international collaboration in space exploration that engage resources and researchers from Hawaii.
- For **A6** The development of new internship and certification programs for students; the development of career pathing materials and related career workshops; the development and implementation of student aerospace design competitions; and the development and implementation of teacher internship and certification programs.
- For A7 The establishment of a Pacific International Space Center for Exploration Systems in Hawaii.
- For **A8** A commercial spaceport license for Honolulu International Airport.
- For **A9** A website containing up-to-date information on Hawaii's aerospace resources and programs.
- For **A10** The development of updated marketing materials (e.g., brochures, video clips) to be used to promote Hawaii's aerospace industry.
- For A11 A detailed inventory of trends and opportunities in the aerospace industry.
- For **A12** Enhanced links between Hawaii and the global aerospace industry.
- For A13 Establishment of OAD and the position of Director within DBEDT.

Outcomes: Identify the short-term (0-2 years) and long-term (2-6 years) outcomes you expect to achieve.

Near-Term (0-2 years):

- A comprehensive understanding of the current priorities/demands/trends in the global space industry and the scientific, educational and economic opportunities they present for Hawaii.
- A strong alliance among Hawaii's government, university and industry sectors supporting aerospace development statewide.
- New legislation promoting and supporting aerospace development in Hawaii.
- The inception of PISCES, with an office and preliminary research & educational programs at UHH.



- An expanded network of public and private sector contacts linking Hawaii with both national and international aerospace agencies, institutions and corporations.
- A commercial spaceport license for the State of Hawaii.
- A comprehensive website and periodic publications providing detailed information on scientific, educational and commercial aerospace activities and programs statewide, leading to enhanced public awareness of and interest in Hawaii's aerospace industry.

Long-Term (2-6 years):

- Expanded MOUs and space act agreements between Hawaii and NASA centers nationwide supporting a broad range of aerospace-related R&D activities (primarily related to robotics, renewable energy, and remote sensing).
- The launch and landings of spaceplanes in Hawaii carrying experimental payloads, satellites and tourists to space, and the development of alternative programs supporting the launch of small payloads from PMRF, sea-based platforms and commercial aircraft.
- An expansion and diversification of JUSTSAP (and the programs this forum supports), coupled with an increase in the number and diversity of international conferences in Hawaii focusing on space exploration and opportunities for international collaboration.
- Comprehensive aerospace education and training programs at the University of Hawaii and at community colleges statewide, and expanded interest and participation in STEM-related K-12 education programs.
- Expanded space-related internship programs at local companies, and with NASA Centers and aerospace corporations nationwide.

Impact: Describe the lasting impact you anticipate.

Expanded research and development opportunities statewide in aerospace-related fields; diversified aerospace education and training opportunities at Hawaii's public and private schools, community colleges and universities; multiple professional agreements between Hawaii and NASA Centers, major aerospace corporations and international space associations to promote collaborative ventures in space exploration; a unique international space center facilitating the design, development, testing and evaluation of new technologies and integrated systems supporting robotic and human missions to the Moon and Mars; and widespread recognition of the State of Hawaii as a major contributor to and participant in the global aerospace industry.



III. PROGRAM EVALUATION

Focus Area: From your program logic model, list the components of the most important aspects of your program.

- FA1 Basic and applied research
- FA2 K-12/college education and training
- FA3 Commercial space development
- **FA4** Public information/community outreach
- **FA5** Networking and collaboration in space exploration
- FA6 Database development/information analysis
- **FA7** Policy formulation
- FA8 Community alignment/support for aerospace

Audience: Identify the key audiences for each focus area. Who has an interest in your program?

- FA1 Universities, local/overseas companies, space agencies/corporations
- FA2 Public/private schools, community colleges and universities; local/overseas companies.
- **FA3** Local/overseas companies, space agencies/corporations.
- FA4 General public
- FA5 Universities, entrepreneurial companies, space agencies/corporations
- **FA6** Public/private schools, community colleges and universities, local/overseas companies, space agencies/corporations, general public
- FA7 Universities, local/overseas companies, space agencies/corporations
- **FA8** Public/private schools, community colleges and universities, local/overseas companies, space agencies/corporations, general public

Note: State and Federal governments should have interests in all of these focus areas,

Questions: For each focus area and audience, list the questions they may have about your program.

- **FA1** How much \$ is available? Are matching \$ required? What areas have highest priority for \$?
- **FA2** Which schools are involved/eligible to participate? What type of training/internship programs are available, and to whom? How can individuals apply?
- **FA3** What incentives are available to catalyze entrepreneurial upstarts? What opportunities exist for local companies to subcontract with major aerospace corporations? What federal programs support commercial space development, and what are their requirements for funding?
- **FA4** How can I learn more about Hawaii's aerospace industry? What are the benefits of space exploration, and what types of challenging careers are available in aerospace?



- **FA5** Which agencies/governments are most interested in collaborating, and in what areas? What venues/protocols are available to seed new international partnerships? How does international collaboration benefit space exploration?
- **FA6** What type of information is available, and how can it be accessed? What are the current priorities/trends in aerospace? What will Hawaii have to do today to become maximally competitive in the global aerospace within the next decade?
- **FA7** What can be done now to assure Hawaii's future leadership in aerospace? What incentives can be put in place to catalyze industry growth? Who should assume leadership for this development?
- **FA8** How can the aerospace industry benefit local communities? What are the biggest challenges to developing Hawaii's aerospace industry, and how can they be overcome?

Information Use: For each audience and question you have identified, identify the ways you will use the evaluation information.

To assist with program development and modifications, long-term planning, website architecture, the development of informational databases, project budgeting and procurement issues.

Indicators: Describe what information can be collected that would convey the status of your program.

Listed by Focus Area

- **FA1:** Number and types of new research programs created; amount of extramural research funding generated; number of research/intern positions created.
- **FA2:** Number and types of education/training programs developed/implemented (e.g., in schools, businesses); amount of \$ generated to support these; number of students/teachers enrolled/graduated from these programs; number of job placements resulting from training programs.
- **FA3:** Number of commercial spinoffs generated from basic/applied research; number of new commercial programs/activities/companies developed; number of \$ generated through "space tourism" (e.g., professional conferences, visits to aerospace facilities, suborbital flights).
- **FA4:** Creation of State website for aerospace; number and types of public reports generated; number and type of public programs sponsored (e.g., space exhibitions at shopping centers; astronaut visits to local schools)
- **FA5:** Number and types of aerospace meetings/workshops/conferences/exhibitions held in Hawaii; number of meetings/workshops/conferences/exhibitions attended overseas; number of new professional contacts made; number of new MOU/collaborative agreements signed; number and type of new aerospace projects implemented;
- **FA6:** The types and volume of data generated on aerospace industry programs/demand/trends; recommendations produced from database analyses.
- **FA7:** Number and types of legislation introduced/passed supporting aerospace development; identification of niche areas and priorities for development; establishment of administrative guidelines to support aerospace development.
- **FA8:** Formation of aerospace advisory board; number and types of articles/news stories featuring aerospace (in newspapers/magazines and on TV/radio); corporate and government sponsorship of aerospace-related activities (e.g., local exhibits; participation at national/international conferences); types and frequency of public inputs to State aerospace website.



IV. ALIGNMENT

How is your program linked to DBEDT's six strategic objectives?		
1.		Workforce Housing
2.	X	Workforce Development
3.	x	"Energy For Tomorrow"
4.	X	"Global Links/Export of Goods and Services"
5.	X	The Creation Of An "Innovation Infrastructure"
6.	Х	Improve Hawaii's Small Business Environment

If your program is not linked to any of the six objectives, explain why it is still important.