



Space Florida 2008-2009 Annual Report
Submitted November 30, 2009

“A Time of Transition”





JEFF KOTTKAMP
LIEUTENANT GOVERNOR

November 23, 2009

Dear Space Florida Stakeholder,

It has been a pleasure serving as the Chairman of the Space Florida Board of Directors this past year. Our organization – and the space industry as a whole – is going through significant transition, and I am grateful for the opportunity to be a part of something so critical to the future of our state.

The Governor and I have each had unique opportunities over the past several months to directly address members of the Obama Administration on behalf of the State of Florida. Most recently, Governor Crist sent a letter to the President asking him to keep the promises he made during a visit to Florida's Space Coast in August 2008. During that visit, the (then) presidential candidate committed to assist in closing the gap in employment resulting from Shuttle program retirement in 2010 by supporting continued funding for NASA, by speeding up the development of the Shuttle's successor, and by minimizing job loss as we transition to a next generation Exploration Program.

On July 30, NASA's Review of Human Spaceflight Plans Committee held a public hearing in Cocoa Beach. During that session, I directly addressed the panel and suggested they urge the President to not only keep the above promises, but also make additional investment in our nation's next generation space program, and to recognize the significant financial and infrastructure investments states like Florida have made in recent years to bring our nation considerable economic growth. I also strongly recommended committing to maximum utilization of the International Space Station (ISS), infusing incentives to ensure a vibrant domestic commercial space sector, and using space as a catalyst for progressive STEM education programs, ensuring the U.S. remains not only a global leader in space – but a global leader in the innovation industry.

Florida's rich 50 year history as a leader in space provides us a solid foundation to pursue new opportunities, particularly in the commercial space arena, for our world class workforce. The Space Florida Board of Directors is committed to doing everything possible to maintain Florida's leadership role in the space industry now and for generations to come.

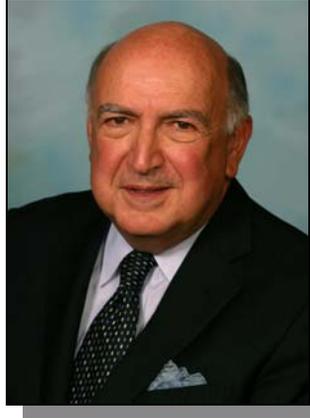
As you read through Space Florida's accomplishments over the past fiscal year, you'll see that much of the critical groundwork has already been established to pursue new commercial space opportunities that arise, while also ensuring that Florida-based NASA and DoD programs continue to succeed and grow.

I see a bright future ahead for our state and I know, thanks to the continued efforts of Space Florida, that we will have many great successes to share with you over the coming year.

Sincerely,

A handwritten signature in blue ink, appearing to read "Jeff Kottkamp".

Jeff Kottkamp



Welcome to the Space Florida Annual Report!

I am pleased to have recently been selected as the new president of Space Florida. I appreciate the opportunity to serve the State of Florida, the state's aerospace community and our stakeholders, as we develop a forward-thinking, innovative, market-facing strategy for the coming months and years.

Looking back, the 2008-2009 fiscal year has been full of transitions for the space industry...and all of them directly impacting Florida. President Obama named new leadership to NASA and launched the Augustine Commission's investigation into how to best meet our nation's global space ambitions. The U.S. Air Force showed signs of embracing a new commercial capability and worked with our organization to continue the development of Florida's commercially-focused Customer Assistance Service Program for the Eastern Range. Commercial companies like Space X have established full operations on the Space Coast and others have shown great interest in expanding into our state.

One theme has been clear over the past year. Diversification into increased commercial enterprise is a key component of our nation's next-generation space initiatives. While Florida is arguably well-positioned to serve as a main site for launch in the coming years, we have work to do when it comes to taking full advantage of commercial opportunities that will continue to play a critical role in the future of space exploration and utilization.

Throughout this Annual Report, you will notice that a majority of our organization's efforts over the past year have been focused on three things in particular:

1. Creating an environment that is conducive to fostering commercial space industry growth in Florida via:
 - a. Launch complex and infrastructure development, financing and refurbishment
 - b. Working with civil and military partners to create commercially-friendly processes and programs/offices
 - c. A renewed focus on R&D
 - d. Strategic national, statewide and local partnerships

2. Support of current space program initiatives that benefit our state (specifically NASA and Air Force/DoD programs)
3. Developing the next-generation space workforce in Florida

These are all critical efforts and create a foundation for success moving forward in this dynamic time for the space industry. I am extremely proud of the “wins” Space Florida has garnered in the past year and look forward to being a part of our efforts to take this organization - and the state’s space industry – to the next level.

To that end, we have great plans for the year ahead. We have already rolled out the beginnings of a new strategic plan – “Vision 2020” – detailed further in this document. Its principal components are diversification of the space industry in 10 targeted markets and strengthening the supply chain. In addition to the Vision and related target markets, Space Florida will also spend the upcoming year focusing, attracting, and expanding the job market in Florida because our number one focus is jobs. We will do that through three crucial areas:

1. **A “Restoration of Faith”** – with our organization having gone through significant changes (not only in leadership, but also in strategy) over the past year, we will focus on increasing our communication efforts and outreach to the industry, the community and our national, statewide and local partners.
2. **Aggressive Business Development Initiatives** – specifically, we will focus on pursuing business opportunities in launch, human spaceflight support systems, satellite/payload assembly and integration, ISS applications, next-generation exploration systems, space technology applications, and new industry clusters.
3. **Investment, Development and Utilization of State Assets** – from existing and new infrastructure investment, to human resources, R&D capabilities, education initiatives and financing/incentive capabilities, Space Florida will focus on leveraging Florida’s existing and potential assets to generate new business.

I look forward to sharing milestones related to these areas with you as the year progresses.

Finally, I’d like to take a moment to personally thank Space Florida’s dedicated Board of Directors, who remain committed to ensuring Florida’s prominent place in space. Your leadership is critical to our success. Thank you for helping us to achieve all that we were able to describe within this report.

Sincerely,



Frank A. DiBello, President
Space Florida



2008-2009 Annual Report

Transitioning from Past to Future: A New Frontier for Business Development

SECTION I

Building Relationships – A Foundation for Success

Building strong relationships – with community partners, current and potential customers, legislators, and local/regional agencies – is key to creating the type of dialogue and overall business environment necessary to form a successful business model in today’s dynamic space industry. While Space Florida and its legacy organizations did a significant amount of work forging critical relationships to get the organization where it is today, there was a concerted effort made in the past year to enhance those relationships to benefit Florida’s future in space. Today, we continue to work these relationships at national, state and local levels.



From a national perspective, Space Florida deepened its relationship with the Federal Aviation Administration (FAA) in 2008-2009. That relationship enabled our organization to submit – and receive acceptance for – a request to combine the Site Operator’s License requests for Space Launch Complexes (SLC) 36 and 46 at Cape Canaveral Air Force Station (CCAFS). These pads are currently at different levels of build-out and restoration in preparation for future commercial business in the light-to-medium launch market. The consolidated license request will greatly expedite our capacity to get these sites operational in the near-term.

During the year, Space Florida senior executives also took time to personally visit and provide proposals to other critical national partners, including Air Force Space Command, NASA

Headquarters, the National Space Security Office, the National Reconnaissance Office, and the Departments of State, Labor, and Commerce.

As a State entity, Space Florida must leverage its **statewide partnerships**, which are a critical component to creating a commercially-friendly environment for launch providers, payload processors, supply chain manufacturers and ground operations and support companies.



Enterprise Florida, Inc. (EFI), is a public-private partnership serving as Florida's primary organization devoted to economic development. In the 2008-2009 fiscal year, EFI and Space Florida partnered regularly to host or participate in aerospace industry-themed meetings and gatherings – such as a Fall 2008 Aerospace Contractor Tax Incentive Breakfast – to educate space contractors on current, available tax incentives through the State, for new and/or expanding businesses in the space sector. Space Florida will continue to seek opportunities to partner with EFI for the benefit of the state's aerospace future.

Workforce Florida, the Florida Economic Development Council (FEDC), the Florida Chamber of Commerce, the Office of Tourism, Trade and Economic Development (OTTED) and Associated Industries of Florida (AIF) are all active and critical partners with Space Florida on a number of unique initiatives as well. For example, during the past year, EFI, the Florida Chamber and Space Florida came together to champion Research and Development tax credit legislation, which is a critical missing element to Florida's capability to attract new business. As a result of our combined advocacy efforts, this issue is strongly positioned for consideration during the 2010 Legislative Session.



In addition to government partners, Space Florida spends a significant amount of time with Florida-based aerospace contractors, serving as an advocate for their needs at the State level. As a result of unprecedented partnership between industry, Space Florida, and other space-related advocacy organizations, this year's annual "**Space Day**" state legislative lobbying effort was the largest the industry has seen to date, with 28 organizations representing a unified front at the State Capitol on March 4, 2009.

Specific items advocated for at this year's event included:

- Tuition reimbursement tax credits w/added incentives for FL university graduates

- \$3.18M request by the Agency for Workforce Innovation in the Governor's budget to support Shuttle retirement workforce analysis, training opportunities, career counseling, support services and employment placement. (Supported by Workforce Florida)
- Establishment of a multi-university institute to perform space transportation R&D for a proposed FAA Center of Excellence, to improve launch industry competitiveness
- Renewed support from Transportation Trust Fund to improve space infrastructure
- R&D tax credit to stimulate the development of scientific and technological advances
- Extension of investment in Governor's Innovation Incentive Program to attract high-value R&D and business projects
- Support of Commercial Launch Zone legislation to provide unique incentives to benefit commercial space businesses with a Florida presence
- Support of Space and Aerospace Catalyst and Enhancement (SPACE) Program, providing Space Florida the ability to more easily access appropriated funds
- Space Florida \$4M budget request

There are also State-level (governmental) committees that are important to ensuring Florida has a vested interest in the success of the space industry in the coming years. In 2008 and 2009, Space Florida senior executives were appointed to two such committees. Space Florida's president was appointed to the Statewide Inter-modal Transportation Advisory Council (SITAC), and Space Florida's Vice President of Spaceport Operations was appointed to the Strategic Inter-modal System (SIS) Leadership Sub-Committee, which drafts language enabling space-related transportation development through the Office of the Florida Secretary of Transportation.

Additionally, on the State Government level, Space Florida continues to foster relationships with key leaders and legislators to prevent budget cuts for the State's aerospace interests, while promoting key industry issues. The Space Florida President is always central to these relationships and personally testifies before the Senate Commerce and House Economic Development Appropriations Committees in support of the industry.

To be a true advocate for statewide aerospace policy, it is critical that organizations like Space Florida take the time to personally visit space-related communities and determine current and future needs. In some instances, Space Florida will leverage gatherings of local EDC and Chamber leaders to accomplish broad reach through a single event. For example, in July 2008, Space Florida had the unique opportunity to address 120 Chamber of Commerce presidents from across the state at the 88th Annual Florida Association of Leadership Professionals Conference, held at Kennedy Space Center Visitors Complex, making all attendees aware of Space Florida's interest in partnering with communities (like theirs) across Florida to ensure responsible aerospace industry growth.

At the Space and Technology Forum in September 2008, Florida legislators, local officials and aerospace business executives gathered in Brevard County to discuss recent legislative wins and priorities for the coming year, STEM education needs, R&D opportunities, workforce training and transition strategies, business development and space infrastructure updates, and State and Federal partnership opportunities. At this unique annual gathering, Space Florida, NASA-KSC, Associated Industries of Florida and the Economic Development Commission of Florida's Space Coast had the opportunity to directly address this group of influentials. Through participation in

these types of locally-based, politically influenced events, and through involvement in organizations like the Brevard County Transportation Planning Organization (TPO) and the Brevard Workforce Development Board, Space Florida is able to strengthen the state's efforts to advocate for Florida-based incentives to keep Florida truly competitive with other domestic spaceports.

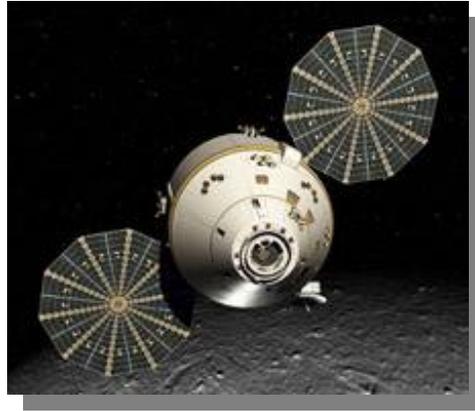
Wins for Florida

While much of 2008-2009 was spent developing critical foundations to foster future space business in Florida, there were five key, measurable "wins" that helped Space Florida further position the state as a significant force in the global space market.

2008-2009 was a challenging year for our state's economy – and Space Florida was only one of many state entities competing for extremely limited resources. Our government relations and senior executive staff worked diligently to ensure Space Florida received a budget that would enable continued operations and business development projects. A final budget of \$3.8 million was granted to Space Florida for the 2010 fiscal year.



In August 2008, **Space Launch Complex 36 (SLC-36)** at Cape Canaveral Air Force Station was assigned by the Air Force to Space Florida, representing the intent of the Air Force to lease the complex to Space Florida for build out of the site. Florida Governor Charlie Crist, Lt. Governor Jeff Kottkamp, and other State notables were on-hand to witness the ceremony. The assignment of SLC-36 to Space Florida served as a symbol of a major transition in USAF thinking regarding Florida's space industry, demonstrating the value of a strategic partnership between Space Florida and the 45th Space Wing to make surplus launch infrastructure available for civil and commercial utilization. This announcement also signaled USAF intent to further embrace commercial space capability at Cape Canaveral. Once fully built out, SLC-36 will be able to support light-to-medium lift, vertical launches from civil, military, and/or commercial sectors.



In January 2009, Lockheed Martin announced the end of a two-year renovation of the High Bay Facility at the historic Operations and Checkout (O&C) Building at NASA's Kennedy Space Center (KSC). The renovation, partially funded by a \$35 million State investment through Space Florida, enables Lockheed Martin to begin preparations to build the **Orion Crew Exploration Vehicle (CEV)**, a flagship component of NASA's Constellation Program. In addition to ensuring a key component of the nation's next-generation space exploration program stayed in Florida, the renovation project also provided more than 230 jobs for related design and construction activities.



In June 2009, Space Florida had the opportunity to leverage its unique conduit financing capabilities to refinance a \$92 million transaction for United Launch Alliance (ULA) at **Space Launch Complex 41 (SLC-41)**. The deal enabled Lockheed Martin to transfer a critical sub-lease to ULA, ensuring uninterrupted Atlas V mission success from Florida. Securing a refinancing package of this size can be difficult during challenging economic times, but Space Florida's strong relationships in the financing community ensured a smooth transaction.



In relation to the emerging commercial space market, Space Florida continued its long-standing relationship with **Space X** to support their Florida-based infrastructure projects, ensuring a continuing local presence for this promising entrepreneurial space entity, which has already been named one of two winners of the NASA Commercial Orbital Transportation Services (COTS) contract to ferry cargo to and from the International Space Station.

Three major initiatives were completed in the past year to enhance Florida Space X operations:

1. Space Florida invested a total of \$453,000 to facilitate construction of an Integration Facility/Hangar at SLC-40, allowing launch vehicle and satellite payload processing at the pad.
2. A formal agreement was executed between Space Florida and Space X that legally enables Space Florida to coordinate Space X use of NASA pressure vessels and other critical launch site assets for their Falcon 9 launch vehicle – saving this customer valuable time and expense. As part of this process, Space Florida also financed the initial evaluation and pre-certification and shipment of the vessels as an incentive to the commercial launch provider.
3. Space Florida invested in critical roof upgrades to the Space Operations Control Center (SOCC) at Cape Canaveral, and also provided no-fee use of the facility to Space X for a full year as an additional incentive to the company.

We look forward to continuing to assist commercial companies like Space X as they establish and further develop operations in Florida.

Embracing Research & Development – A Critical Transition For Florida

It is clear that Research and Development is going to play an increasingly important role in next-generation space initiatives for Florida. From cutting-edge life sciences research uniquely enabled by microgravity environments, to key State university partnerships to develop new small satellite technologies, Space Florida is just beginning to forge a strong presence for Florida in the space-related R&D world.



The State of Florida built the **Space Life Sciences Laboratory (SLSL)** at Kennedy Space Center in 2003, and since that time, the facility has been primarily used by NASA to process and ready life science experiments for flight to the International Space Station. To date, Space Florida has served a key role managing the SLSL and providing support for critical research taking place within the facility.



Space Florida provided sponsorship funding for research and development activities conducted at the SLSL (in conjunction with Space Florida's mission) during the year, including a partnership effort between NASA-KSC and Space Florida, for the collaboration in the design and development of a space experiment platform. FASTRACK™, a next-generation research rack (pictured above), was developed to facilitate NASA and commercial use of reusable suborbital flight vehicles in support of science investigations and technology development, and is designed to be adaptable to fly in a variety of other vehicles. In the coming months and years, Space Florida will work together with NASA to leverage use of this new tool within the research community.

In the 2009 fiscal year, Space Florida also provided sponsorship for neurodegenerative research being managed by the Florida Institute of Technology at the SLSL. This research includes studies on Alzheimer's Disease, astronaut bone loss and developing theories on causes and cures for serious diseases like Parkinson's.

In relation to research capabilities of the SLSL, Space Florida also worked diligently with Federal and State legislators to get the SLSL officially positioned in key bill language as a gateway to the ISS for life sciences research. (More detail on this in the “New Space” section of this report.)



The **Exploration Park®** project, a first-of-its-kind research and development park planned for Kennedy Space Center, was announced this past year, following the signing of a 60-year Enhanced Use Lease between Space Florida and NASA for use of the NASA land, located on KSC property. Shortly thereafter, Space Florida made public an Request For Proposal for a Master Developer on the project, and awarded the contract to the Pizzuti Companies, for master development, property management and brokerage of the park.

Exploration Park® will be located adjacent to the SLSL, yet will have direct access for tenants outside the KSC gate. A marketing website for the park has already been launched (at www.explorationpark.com) and Phase 1 of the project, slated for build-out on 60 acres of KSC land, is anticipated to begin construction in 2010.

As part of its mission to advance a wide variety of Florida-based research projects with space ties, Space Florida also provided sponsorship funding to the Florida Space Grant Consortium (FSGC) in support of the Florida Space Research Program (FSRP). The 2008-2009 program provided seed money for 17 unique aerospace and science research projects.

Space Florida also joined forces with the **University of Florida** this year in a cooperative effort supporting the Advanced Space Technologies Research & Engineering Center (**ASTREC**). ASTREC, the first center of its kind in the Southeast, focuses on the betterment of the small satellite industry, and we believe it will serve as a best practice for the region. Space Florida is a charter member of ASTREC – having partially sponsored the program – and is one of 11 industry and government members to date. It is the intention that various Center University environments can be used to perform fundamental and applied research for the purposes of developing, testing, and validating innovative technologies that benefit the space industry and provide those Center Universities with strengthened educational capability. With a significant rise in small satellite interest and utilization among university researchers in the coming years, we at Space Florida see significant promise in programs like ASTREC.



Space Florida also concluded its two-year partnership with Zero-Gravity Corporation (Zero-G), with two sponsored flights, enabling 54 Florida educators from 36 counties to experience an environment of weightlessness and conduct research in microgravity environments. In total, the partnership successfully delivered professional development training to 2,330 teachers and, through them, classroom instruction to more than an estimated 140,000 students over a two-year period. Key research conducted in this year's flights included:

- Causes of nausea in microgravity
- Evaluation of plant growth on simulated long-duration space missions
- Measurement of visual disruption anticipated by lunar soil displaced by landing rockets
- Microgravity effects on water adhesion
- Evaluation and testing of a new cardiovascular monitoring technology that may be used by future astronauts

Additionally, Emmy award-winning PBS TV show host Janet Ivey (shown above), of "Janet's Planet," participated in a Zero-G flight. Space Florida is working with Ms. Ivey to develop a 35-minute educational DVD from her experience on board, titled "Exploring Microgravity." The DVD will be made available to all Florida middle schools free of charge in Spring 2010.

Florida – Making Major Strides in Facing the (New) Space Market

Creating an environment in Florida that will attract next-generation commercial space interests requires taking the necessary steps to change existing perceptions (based on 50 years of history) that Florida is primarily a civil and military launch location only. While other states are making significant strides in developing tax and other financial incentives to attract the commercial space industry, there is simply no state better qualified to handle the emerging commercial space market than Florida. Right now, our state boasts existing quadra-modal access (air, sea, road, and rail) to established space launch sites, weather and launch-tested infrastructure, 50 years of experience in space-based missions and an extremely knowledgeable technical space workforce that is second-to-none.

In the past year, additional strides have been made from the Florida-based civil and defense sectors, including the establishment of a Commercial Liaison Office at NASA-KSC. By standing up an office that specifically addresses commercial customer needs, Florida is showing that it is truly ready to further engage this type of space business. Currently, the 45th Space Wing is also considering the same action. Space Florida regularly works with both of these entities to ensure State-leveraged incentives are included in all commercial opportunity discussions.

In addition to its commercial office, the 45th Space Wing (USAF) has also continued to work with Space Florida to bring new commercial customer opportunities into Eastern Range processes via the Customer Assistance Program for the Eastern Range (CASPER). This year, Space Florida assisted multiple commercial companies through CASPER.

Earlier in the year, Space Florida joined the California Space Authority in lobbying Washington D.C. influentials regarding loosening ITAR (International Traffic in Arms) restrictions. According to commercial satellite customers represented at this year's Satellite 2009 Conference in Washington, D.C., ITAR restrictions are the main reason more of these companies do not launch within the United States. Easing these restrictions would open the U.S. market to more commercial satellite opportunity overall and Space Florida plans to continue working with other domestic spaceports to get this issue addressed on a federal level.

Two significant legislative activities took place this year that were driven by Space Florida and specifically address the commercial space market for Florida:

1. **Passing of NASA Authorization Bill**

- a. Through Space Florida's Government Relations efforts, the Space Life Sciences Laboratory (SLSL) has now formally been acknowledged as a "key asset" in the overall capability of the ISS – giving the facility (and Florida) a much higher profile for incoming life science interests.
- b. Through this Bill, NASA has also agreed to invest resources to further study commercial launch access and processes through U.S. Federal Ranges, including the Eastern Range.
- c. This Bill also supports a study addressing the continuation of NASA Enhanced Use Leases (such as the one recently enacted by NASA to Space Florida for build-out of Exploration Park). The continuation of these leases will facilitate future commercial growth of the space sector on NASA properties.

2. **Proposed CLZ Bill** – Through pro-active, regular engagement with Representative Ralph Poppell and Senator Mike Haridopolos, Space Florida secured the two key State Legislators as sponsors for Florida's Commercial Launch Zone (CLZ) legislation, now proposed and anticipated to receive full consideration in the upcoming session. This Bill would provide a variety of aggressive tax credits and other unique incentives to space-related businesses establishing and/or expanding their presence in Florida.

From an infrastructure perspective, several key accomplishments occurred this year at Space Florida facilities, setting the stage for currently expanding (and future) commercial space business:



Space Launch Complex 46 (SLC-46) received additional restoration and corrosion control work on its existing Mobile Access Structure. Space Florida worked with the 45th Space Wing to determine potential use of the pad for an interested customer, and determined that minimal investment will be required to get this launch complex fully operational. Today, Space Florida awaits a signed Joint Use Agreement from the Navy and execution of the SLC-46 License for full utilization of the pad. The signed agreements are anticipated in the coming fiscal year.

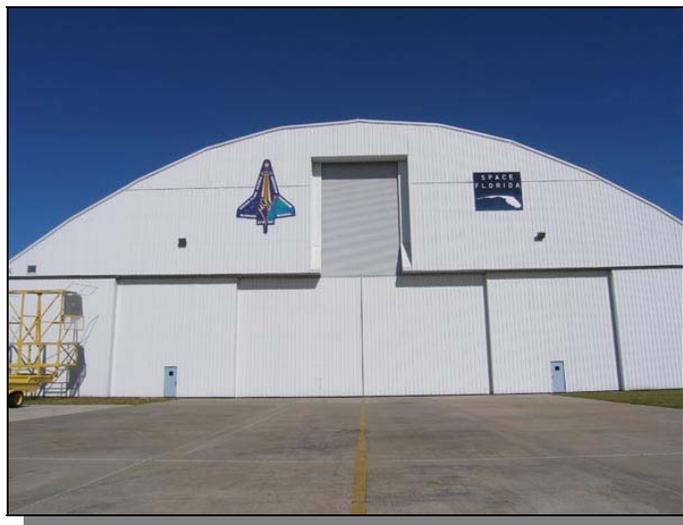


Significant work was also completed on **Space Launch Complex 36 (SLC-36)**, a planned light-to-medium lift pad on Cape Canaveral Air Force Station. Space Florida contracted with Reynolds, Smith and Hills, Inc., for design of the anticipated Launch Complex layout for

infrastructure planning (see conceptual image above). Through an innovative transaction between Space Florida and NASA, infrastructure equipment (consisting of liquid fuel tanks, pressure vessels and ancillary hardware) was identified at the Santa Susana Field Laboratory at Marshall Space Flight Center. Through a Space Act Agreement, NASA loaned the equipment to Space Florida for COTS demonstration efforts and/or other commercial space launch activities. Space Florida provided for relocation of the equipment to Florida enabling a significant cost savings on this critical portion of pad infrastructure, a portion of which is intended to be utilized at SLC-36 and SLC-40 for Space X use.



On September 22, 2008, **Space Launch Complex 47** (SLC-47) hosted an educational Super Loki Rocket launch for Delaware North Park Services and Kraft Foods. This launch served as a critical demonstration mission, validating the abilities of the Space Florida/45SW launch team for the purposes of future Florida University rocket programs.



The State of Florida built a **Reusable Launch Vehicle (RLV) Hangar** in the early 1990's for the NASA X-33 program. When the program did not come to fruition, Space Florida worked with a variety of commercial tenants to occupy the hangar, located adjacent to the Shuttle Landing Facility at Kennedy Space Center. This year, Space Florida completed a \$1.8 million investment in critical roof upgrades and the installation of a cutting-edge, foam fire suppression system, readying the facility for fueled commercial aircraft customers. During the year, the RLV Hangar supported a variety of activities, including the storage of various payloads for Shuttle launch activity and an ORION manufacturing effort. An agreement between Space Florida and Starfighters was also reached to house and maintain fueled aircraft in the hangar.



Space Florida's **Camp Blanding** facility, located in Jacksonville, Fla., is currently leased to United Launch Alliance (ULA) to store Atlas V solid rocket motors in preparation for launches from the Cape Canaveral Air Force Station (see above). The facility achieved near full capacity this year, with 10 Atlas V motors secured and eight more anticipated by December 2009. 100 Super Loki Rocket motors are also currently stored at the facility. Camp Blanding has unique capabilities to meet the needs of commercial customers with government contracts to safely store solid rocket motors in preparation of launches from the Cape Canaveral Air Force Station.

Thinking Outside the Box

The shifts currently taking place in the space industry require innovative thinking. At Space Florida, we are looking for opportunities that lie outside the vertical launch tradition our state is known for and making great strides in expanding Florida's opportunity for growth in the space sector. Doing what we can to make Florida as competitive as possible is always our goal.

This year, Space Florida worked closely with the **Jacksonville Aviation Authority** (JAA) to gain FAA licensure for horizontal launch at Cecil Field. A draft environmental assessment has been released for the site and an official license designation is anticipated soon, giving Florida its first horizontal launch capability for space tourism. In addition to Jacksonville, Space Florida also began investigating an opportunity for a similar horizontal launch capability in South Florida. Eventually, a network of horizontal launch facilities throughout Florida would provide our state with a competitive advantage over others.



In March 2009, **Space Florida and Astrotech announced a Joint Venture** at the Satellite 2009 Conference in Washington D.C. Astrotech, a leading provider of commercial space services, sought to form a collaboration that would provide end-to-end solutions for commercial space interests – from mission planning and spacecraft design to ground/launch operations and mission support. By combining Astrotech’s proven capability to meet the needs of payload customers with Space Florida’s unique capabilities to develop available launch infrastructure, provide customer assistance in navigating Eastern Range processes, and leverage the State-owned Space Life Sciences Laboratory at Kennedy Space Center, the partnership was a perfect fit. Ultimately, we believe that spacecraft developers will strongly consider Florida as a result of having this end-to-end mission assurance capability, which will streamline the process for these companies to get their important payloads into space.



This year, Space Florida invested its resources into launching **Air & Space TV** from Florida, based off of the very successful Golf Channel cable network business model. Air & Space TV is seeking to become the leading media brand for the aerospace and aviation industries. Today, A&S Media continues to develop industry partnerships, compile extensive database of available programming, evaluate co-production opportunities, and have discussions with distributors.



In October 2008, Omega Envoy, the first Florida-based Google Lunar X Prize (GLXP) team, announced its official registration into the global lunar competition. Space Florida had been providing technical and general consultative assistance for the team for some time, and continues to assist their efforts. Space Florida will continue to seek additional GLXP teams that are interested in establishing operations in Florida – an "Official Preferred Launch Site" for the Google Lunar X Prize Competition.



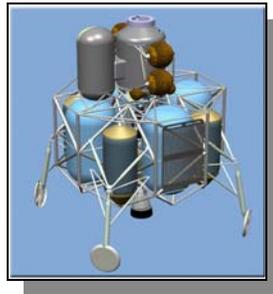
2008-2009 Annual Report

SECTION II

Setting the Stage for Growth in Florida

Pursuing Upcoming Opportunities

In addition to positioning Florida for commercial space in the ways described in the previous section, three opportunities in the civil and defense areas were addressed this year.



Space Florida invested \$100,000 in a study to verify the Space Station Procession Facility (SSPF) at Kennedy Space Center would have the capability to be properly configured for final assembly and checkout of the **Altair Lunar Lander**, a critical piece of NASA's Constellation program. Results from this study confirmed the facility could accommodate Altair work. Study results are currently with NASA, as they assess their other facility options. There are an estimated \$42 million in projects potentially associated with the Altair Program and Space Florida will continue to work diligently to ensure a substantial part of that business is conducted in Florida.



During this year's National Space Symposium in Colorado Springs, Space Florida executives had a unique opportunity to meet with **General Kehler, head of Air Force Space Command (AFSPC)**. During that meeting, the General asked Space Florida to come back to him with a proposal for partnership. This was a fantastic opportunity for us to start a proactive dialogue about a number of important items, including ramping up launches in Florida.

This summer, a formal proposal was hand-delivered to General Kehler that focused on innovative strategies to ensure reduced cost, timely and flexible small-to-midsize space launch missions (off Space Florida managed pads like SLC-46 and SLC-36), and increased satellite processing options for the Air Force in Florida. Space Florida and the Air Force continue discussions regarding these efforts.

Of particular interest in the Space Florida proposal was a partnership to streamline operations on the Eastern Range and foster growth of the commercial space sector domestically, something AFSPC is charged by Washington to have a vested interest in.

One extremely positive opportunity resulting (in part) from our discussions with General Kehler was the recent issuance of the **Spaceports 3 Proposal**, which specifically identified Florida as one of four states pre-qualified to respond to the two task orders – Task Order #1 – provide launch support for Minotaur missions and Task Order #2 – develop a logistics strategy for those missions. Space Florida submitted formal responses to both Tasks, and we expect to hear initial results regarding which states are being selected to complete Task Order #2 before the close of 2009. We are confident that Florida will be one of the sites selected to complete this task.

Today's Shuttle Workforce – A Key Asset for Florida and Our Nation

As the Shuttle Program comes to an end, thousands of seasoned engineers and technicians will find themselves attempting to fill a gap in employment until the next-generation space systems come to fruition. Space Florida has partnered with Workforce Florida and the Brevard Workforce Development Board (as well as the affiliated Aerospace Career Development Council) to study the combined skill set of these workers and assess related job opportunities in Florida. Brevard Job Link was also established on site at KSC and Cape Canaveral Air Force Station to provide ongoing support and assistance for the transitioning workers.

In September '08 the Brevard Workforce Development Board (BWDB) provided a final report on the results of a long-term effort, partially funded by Space Florida, to develop strategies for transitioning Shuttle workforce. BWDB conducted three focus groups to test revised key messages geared toward the aerospace workforce. Two of these groups were for USA supervisors and employees and the remaining session was conducted with community stakeholders. Results were positive.

In November 2008, Space Florida and NASA hosted a Florida Workforce Leadership Summit. The Summit provided an opportunity for Federal, state, and local organizations to exchange information that could be beneficial in ensuring the retention of the highly skilled technical workforce required to carry out U.S. space exploration policy.

Space Florida worked with industry partners for a Technicians Training Program which consisted of technicians completing a three-month work/study program developed to raise skill levels among current space workers in areas of future potential for Florida. These areas included solar power, fiber optics, PVC skills and wind turbine installations. In addition to Space Florida, partners in this program included: the Florida Institute of Technology, Florida Solar Energy

Center, University of Central Florida, University of West Texas (Wind Power), Florida solar power installers, contractors and industry.

Space Florida completed a Program Report which identifies specific power industries that may provide future opportunities for Shuttle workers, including:

- a) Fiber Optics
- b) Wind Turbine Installation
- c) Solar Power Installation and Maintenance
- d) Photo-Voltaic Cell Development and Usage

Space Florida sees great promise in retraining programs like this and fully plans to continue the pursuit of such programs in the coming year.

Space Florida is also actively working with client and target aerospace companies to define future skills needs for Workforce Development Board-focused training initiatives. Through these types of efforts, employers are working directly through special workforce training programs to identify workers that are potentially available in other companies.

A Critical Transition: Developing the Next-Generation of Space Talent

A key component to ensuring Florida's future in space lies in the innovative educational opportunities our industry provides to today's students – our next-generation space workforce.

At the **University level**, Space Florida – in conjunction with the NASA/Florida Space Grant Consortium – provides five-day workshops for undergraduate and graduate level students interested in entering the space/science fields upon graduation. During these sessions, students engage with key space employers from Kennedy Space Center and Cape Canaveral, and participate in challenging, real-world science and engineering projects. As a part of the program, the students also build and test payloads for scientific weather balloons and participate in additional space facility tours and Q&A sessions.

This year's Space Florida Academy sponsored both college and K-12 students and teachers. A total of 162 Florida University and Community College students, 30 middle school students, 27 high school and middle school teachers participated in the program. Additionally, 300 students experienced an "abbreviated" version of the academy as well.

At the college level, Space Florida also sponsored 10-week internships at KSC and Florida's High-Tech Corridor, where students were able to spend time with these leading and influential individuals to learn more about America's Space Program (as well as job opportunities associated with it). This year, Space Florida co-sponsored a total of 22 such internships.

In addition to the Academy Program and KSC internships, Space Florida also assisted Florida Universities with initial steps of working established rocket programs (i.e. Florida Institute of Technology and Embry-Riddle Aeronautical University) through 45th Space Wing processes, to develop initial requirements for sounding rocket teams that wish to conduct future missions from Cape Canaveral.



In 2009, Space Florida conducted its first **Undergraduate Academy Survey**. This electronic survey was distributed to all students who had participated in Space Florida’s Undergraduate Academies since the inception of the organization, in December 2006. Of those alumni who responded, 57.9% are now working in STEM-related fields, including NASA and major space contractors. Of those not working in STEM, 38% were still in college and 2% were in the military, leaving less than 1% that had completely unrelated careers post graduation.

“I would definitely say the Academy program opened doors for me to obtain a career in the space industry and at KSC. It was a valuable learning experience and I would recommend the program to any student wanting to find a job in space.” – Brendan, Embry-Riddle Alumni



Space Florida’s Education Team spends a significant amount of time developing and facilitating a number of unique, interactive and innovative programs that uniquely address the needs of both educators and students. From a **K-12** perspective, Space Florida programs focus on STEM education initiatives and resources that teachers can use to inspire and motivate their students to pursue careers (and further collegiate-level study) in the space industry.



One of Space Florida’s most successful and popular STEM programs to date is the **ITET “Teach the Teachers’ program**, where Florida teachers are invited to participate in 3-5 day workshops where they learn the “Inquiry” method of teaching – an interactive form of STEM instruction. This year, Space Florida held 20 such sessions, impacting 536 teachers from across the state.

Space Florida also partially funded an educational pilot program in Orlando called “MASA” (Math, Arts and Science Achievement). This program was the first of its kind in Florida, meant to target advanced-level STEM students. The inaugural MASA program impacted 261 K-12 students through seven sessions over seven months. As funding permits, Space Florida intends to introduce similar sessions in other areas of the state.



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SECTION III Preparing for Florida's Future

Business & Spaceport Master Plans

Space Florida is statutorily required to have a complete Business Plan and Spaceport Master Plan to guide its operations. During the past fiscal year, 100% drafts of both items were completed, yet it is easy to understand why these types of guiding documents must remain dynamic in today's space industry environment.

In addition to adjusting organizational priorities to mirror a shifting commercial marketplace, Space Florida also underwent a high-profile leadership change this year, which led to a complete rethinking of overall business operations.

Keeping these two factors in mind, the current drafts of both plans named above will likely undergo significant change in the coming months. However, much of the strategy contained within the current drafts will help to form the foundation for any new plans. The following is a brief overview of each plan as it stands today:

Per Space Florida's guiding statute, the **Business Plan** should "*foster the growth and development of the aerospace industry (through) business development, finance, spaceport operations, research and development, workforce development, and education.*"

The current iteration of this plan addresses each of these areas in detail, focusing specifically on strategic national, state, and local partnerships formed to create an environment that is conducive to growth in the commercial, civil and defense sectors of Florida's space industry.

Highlights of this plan include:

- Space Florida's investment into creating and initiating the Customer Assistance Program for the Eastern Range (CASPER), an assistance program for commercial customers to help navigate the complexities of Eastern Range processes
- The development of economic incentive packages (including proposed Commercial Launch Zone legislation) that generate mutual opportunities for payload developers, space launch providers, suppliers, service providers, and associated institutions – focusing on rewarding businesses that stimulate capital investment and job creation

- Creating differentiators for Florida by forging joint ventures that provide end-to-end solutions for customers (ex: Astrotech/Space Florida joint venture discussed earlier in this report)
- Ways to best leverage Florida’s other competitive advantages (i.e. geophysical location that supports a wide variety of orbital requirements, current and future launch infrastructure capabilities, an existing skilled workforce, and unique State empowerments)

Additionally, Space Florida’s Business Plan acknowledges that (1) Shuttle retirement will drive changes in workforce skill sets required for NASA’s Constellation Program, (2) new commercial opportunities may require additional skill sets or niche capabilities and (3) a large segment of the current aerospace labor force is nearing retirement, making it even more critical that STEM education initiatives inspire and motivate our next-generation workforce in Florida. The plan also provides an updated market assessment, financial plan, and business model.

By statute, the Space Florida **Spaceport Master Plan** must address “*expansion and modernization of space transportation facilities within the spaceport territories.*” The current full draft assesses current space infrastructure and capacity, assesses the needs of the market, identifies plans for modernization and expansion, and describes a path for implementation. Major findings within this plan include:

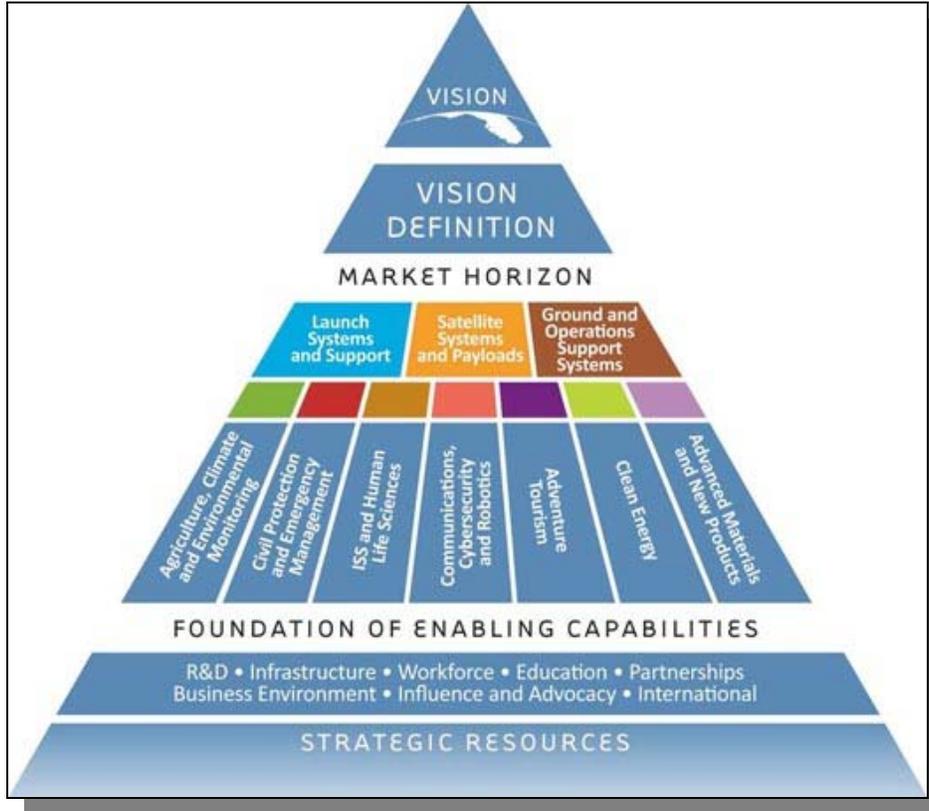
- New sources dedicated to funding space transportation will need to be developed; either to augment the existing trust fund or to establish a separate Space Transportation Trust Fund to finance capital projects.
- The Eastern Range currently has the capacity to support all anticipated launches.
- Existing payload processing capabilities for commercial and non-commercial missions are adequate for the forecasted market.
- The Falcon 9 and Taurus II may be able to support the medium-class launch market for commercial, DoD and NASA missions following the retirement of Delta II in 2012.
- When fully operational, the Space X Falcon 9 will be able to support ISS re-supply and commercial access to space.
- Following the retirement of the Space Shuttle in 2010 and the retirement of Delta II in 2012, the Delta IV, Atlas V and Falcon 9 programs will provide the only active launch capability until NASA’s Ares I is activated in 2015 or later.
- There is market demand and the potential for Florida to be a leader in orbital and suborbital space tourism.

Additionally, Space Florida identified specific projects within the Spaceport Master Plan that will be submitted to the Florida Department of Transportation so they may be included for consideration in the FDOT Five-Year Work Program. Proposed projects include:

Project Description (in alpha)	Location
JAA RLV Fueling Facility	Cecil Field Spaceport
JAA RLV Hanger & Assembly Facility	Cecil Field Spaceport
JAA RLV Taxiway & Apron Facility	Cecil Field Spaceport
NASA KSC Shuttle Landing Facility Improvements	Kennedy Space Center
Space Launch Complex 36 Phase 0 Design and Construction	Space Florida Spaceport
Space Launch Complex 46 Refurbishment	Space Florida Spaceport
SLS - Exploration Park Transportation Improvements	Kennedy Space Center
Spaceport Master Planning – Living Document Maintenance	Fla. Space Master Planning
SpaceX Falcon 9 Vehicle Storage Space	CCAFS
SpaceX Falcon 9 Dragon Capsule Processing Facility	CCAFS
SpaceX Falcon 9 Ordnance Storage	CCAFS
SpaceX Falcon 9 Booster Refurbishment Facility	CCAFS
ULA Vertical Integration Facility and Mobile Launch Platform	CCAFS – SLC-41

Space Florida will continue to work with State agencies, NASA and 45th Space Wing to fine tune these plans in the coming months, to ensure Florida’s spaceports meet the needs of all potential customers.

Facing the Market – Vision 2020



Under Space Florida’s new leadership, a fresh vision is emerging for the organization. As we embrace the changing space industry and the growing commercial marketplace, Space Florida will focus its efforts on specific market segments that enable substantial opportunities for Florida’s space economy.

The graphic above depicts Space Florida’s new vision and market-facing strategy (including the 10 market segments planned for business development focus), which will guide the organization for the next decade. This vision embraces the changes currently taking place in our industry, and utilizes Florida’s existing capabilities (R&D, infrastructure, workforce, education, partnerships, business environment and influence/advocacy) as a foundation for growth. As a result of implementing this market-facing strategy, **Space Florida plans to serve as a catalyst to increase aerospace-related jobs and economic impact three-fold in Florida by 2020.**

Historically, Florida has been known as the home of U.S. manned space launch, yet we have the capacity to address payload processing, ground and mission operations, and so much more. We look forward to keeping you – our stakeholders, investors, and customers – apprised of our progress, through the implementation of “Vision 2020,” over the coming months, and look forward to your insight along the way.



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Financial Documents

